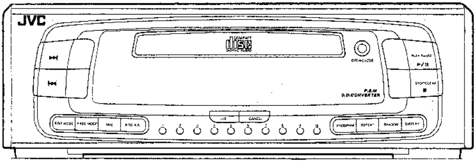
JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

CA-MXG9BK

(Unit No. XL-MXG9BK)



COMPACT
disc
DIGITAL AUDIO

Note

1. This manual is for one part of the titled model consisting of the plural units as detailed.

Unit No Consisted	*Part of Model*	*Manual No.*
XL-MXG9BK	*COMPACT DISC PLAYER*	*20436*
RX-MXG9BK	*TUNER-AMPLIFIER*	*20434*
SE-MXG9BK	*S.E.A-GRAPHIC EQUALIZER*	*20435*
TD-MXG9BK	*CASSETTE DECK*	*20437*

2. For instruction manual,packing matherials and accessories,please refer to the RX-MXG9BK (S.M.No.20434.)

3. RX-MXG9BK is needed(for power supply etc.)when servicing.

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No. 20436
Jun. 1993

Important for Laser Products

1. CLASS 1 LASER PRODUCT
2. **DANGER :** Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. **CAUTION :** There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
4. **CAUTION :** The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. **CAUTION :** If safety switches malfunction, the laser is able to function.
6. **CAUTION :** Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
7. **CAUTION :** The compact disc player provides a laser diode of wavelength 780-790nm and optical output power typical 3mW at the laser diode.

VARNING : Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

ADVARSEL : Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning, når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS

WARNING LABEL

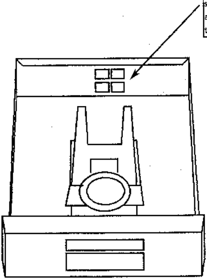
(Except for the U. S. A.)

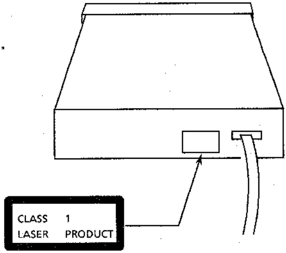
DANGER: invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)

VARNING: Osynling laserstråling när denna del å öppnad och spärren är urkoppled. Betrakta ej stålen. (s)

ADVARSEL: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgåudsættelse for stråling. (d)

VARO: Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)





CLASS 1
LASER PRODUCT

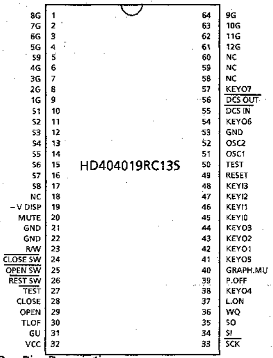
CLASSIFICATION LABEL

(Except for the U. S. A. and Canada)

Description of Major LSIs

■ HD404019RC13S (IC991) : Micro-computer

1. Terminal Layout


HD404019RC13S
8G 1
7G 2
6G 3
5G 4
S9 5
4G 6
3G 7
2G 8
1G 9
S1 10
S2 11
S3 12
S4 13
S5 14
S6 15
S7 16
S8 17
NC 18
– V DISP 19
MUTE 20
GND 21
GND 22
R/W 23
CLOSE SW 24
OPEN SW 25
REST SW 26
TEST 27
CLOSE 28
OPEN 29
TLOF 30
GU 31
VCC 32
64 9G
63 10G
62 11G
61 12G
60 NC
59 NC
58 NC
57 KEYO7
56 DCS OUT
55 DCS IN
54 KEYO6
53 GND
52 OSC2
51 OSC1
50 TEST
49 RESET
48 KEYI3
47 KEYI2
46 KEYI1
45 KEYI0
44 KEYO3
43 KEYO2
42 KEYO1
41 KEYO5
40 GRAPH.MU
39 P.OFF
38 KEYO4
37 L.ON
36 WQ
35 SO
34 SI
33 SCK

2. Key matrix

	KEY IN 0	KEY IN 1	KEY IN2	KEY IN3
KEY OUT 1	①	③	⑦	⑨
KEY OUT 2	④	②	⑤	
KEY OUT 3	⑩	⑥	⑧	PROGRAM
KEY OUT 4		⏮	EDIT MODE	⏭
KEY OUT 5	SIDE A/B	TIME	FADE MODE	
KEY OUT 6	REPEAT ALL / 1	RANDOM	DISPLAY	+10
KEY OUT 7	PLAY / PAUSE	OPEN / CLOSE	CANCEL	STOP / CLEAR

3. Pin Description

Pin No.	Symbol	I/O	Functions and Operations	Pin NO.	Symbol	I/O	Functions and Operations
1~4	8G~5G	O	FL grid control output	35	(D IN) SO	O	Serial data output for IC841
5	S9	O	FL segment control output	36	WQ	I	Write request signal input
6~9	4G~1G	O	FL grid control output	37	L.ON	O	Laser on signal output
10~17	S1~S8	O	FL segment control output	38	KEYO4	O	Key matrix output
18	NC	–	Non connection	39	P.OFF	O	Power off signal output
19	-VDISP	I	FL Power supply	40	GRAPH.MU	O	Graphic mute signal output
20	MUTE	O	Mute signal output	41	KEYO5	O	Key matrix output
21	GND	–	Ground	42~44	KEY OUT1 ~ KEY OUT3	O	Key matrix output
22	GND	I	Ground	45~48	KEY IN0 ~ KEY IN3	I	Key matrix input
23	R/W	O	Read / Write signal output	49	RESET	I	Reset signal input
24	CLOSE SW	I	Close switch : active low	50	TEST	I	Test mode input : connected to + 5V
25	OPEN SW	I	Open switch : active low	51	OSC 1	I	Clock Oscillation input
26	RESET SW	I	Reset switch : active low at the inmost position of pickup	52	OSC 2	O	Clock Oscillation output
27	TEST	I	Test mode input	53	GND	–	Ground
28	CLOSE	O	Close signal output	54	KEYO6	O	Key matrix output
29	OPEN	O	Open signal output	55	DCS IN	I	Compu-link signal input
30	TLOF	O	Tracking servo off signal output	56	DCS OUT	O	Compu-link signal output
31	GU	O	Tracking gain up signal output	57	KEYO7	O	Key matrix output
32	VCC	–	+ 5V	58~60	NC	–	Non connection
33	SCK	O	Clock output for IC841	61	12G	O	FL grid control output
34	(D OUT) SI	I	Serial data input from IC841	62~64	11G~9G	O	FL grid control output

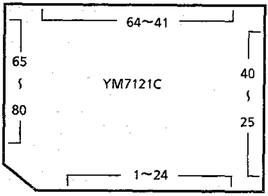
■YM7121C(IC841)

1. Outline

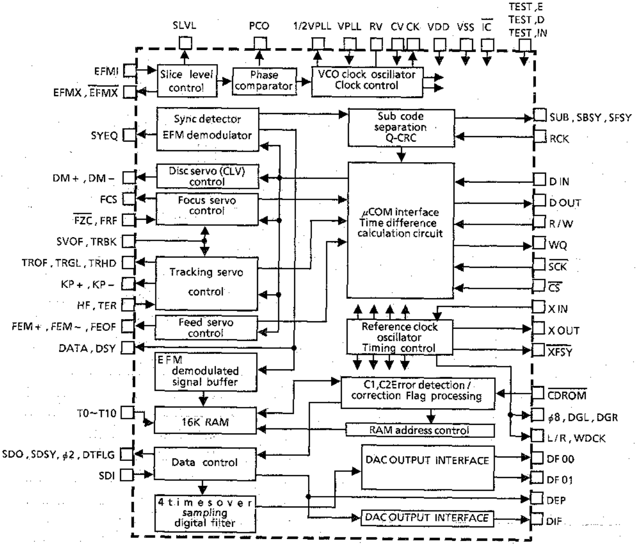
YM7121 is a C-MOS LSI for signal processing and servo control (SVC) in a CD player. It is used for the demodulation of the EFM signal from the laser pick up , detection / correction of the error signal , signal processing in digital filtering , etc. and for various servo controls (focusing , disc , tracking and feed servos).

And it contains digital interface which output the audio digital signals in S-RAM and CD-player. This digital interface matches EIAJ standards.

2. Top View


64~41
65
∫
80
YM7121C
40
∫
25
1~24

3. Inner Block Diagram


SLVL
PCO
1/2VPLL
VPLL
RV
CV
CK
VDD
VSS
IC
TEST,E
TEST,D
TEST,IN
EFMI
EFMX , EFMX
Slice level control
Phase comparator
VCO clock oscillator Clock control
Sync detector EFM demodulator
Sub code separation Q-CRC
SUB , SBSY , SFSY
RCK
SYEQ
DM + , DM −
Disc servo (CLV) control
FCS
Focus servo control
FZC , FRF
μCOM interface Time difference calculation circuit
D IN
D OUT
R/W
WQ
SVOF , TRBK
TROF , TRGL , TRHD
Tracking servo control
SCK
CS
KP + , KP −
HF , TER
XIN
FEM + , FEM − , FEOF
Feed servo control
Reference clock oscillator Timing control
X OUT
XFSY
DATA , DSY
EFM demodulated signal buffer
C1,C2Error detection / correction Flag processing
CDROM
T0~T10
16K RAM
ϕ8 , DGL , DGR
RAM address control
L/R , WDCK
SDO , SDSY, ϕ2 , DTFLG
Data control
DAC OUTPUT INTERFACE
DF 00
SDI
DF 01
4 times over sampling digital filter
DEP
DAC OUTPUT INTERFACE
DIF

4. Terminal Function

Pin No.	Symbol	I/O	Function and Operation
1	CV	I	Adequate time constant is added to this terminal and input the PCO output. This makes the structure of clock reproduce circuit by inner VCO circuit.
2	RV	–	RV terminal is standard voltage terminal of inner VCO. And capacity for stabilizing is added to this terminal.
3 32 72	VDD	–	These are +5V power supply terminals.
4 5 70	TEST. IN TEST. E TEST. D	I I I	These terminals are for test.
6	SYEQ	O	This is the check output terminal, it becomes high when flame synchronizing signal detected from EFM pattern coincides frame synchronizing signal from internal counter.
7 8	DSY DATA	O O	Not used.
9	CK	O	CK has 4.3218 MHz clock.
10~19	T0~T9	I	This terminal is internal RAM test terminal, and connected GND.
22	DEP	O	De-emphasis is necessary when this terminal is high.
23	DIF	O	DIF is digital audio interface format output matched EIAJ standards.
24	SDO	O	SDO is a serial signal output of $\phi 2$ bit rate.(The MSB puts in at first.)
25	SDI	I	SDI is the input terminal of 4 times over sampling digital filter. It is usually connected with SDO.
26	SDSY	O	Not used.
27	DTFLG	O	Not used.
28	$\phi 2$	O	Not used.
29, 52, 77,66	VSS	–	GND
30	XOUT	O	Not used.
31	XIN	I	Input from crystal clock.
33	$\overline{\text{XFSY}}$	O	Not used.
34 35 36 37	SUB SBSY RCK SFSY	O O I O	After detecting that SBSY changes from low to high by IC991, the sub-code(P~W) can be output from SUB output terminal by inputting 8 clocks to RCK terminal at every point where SFSY changes low to high.
38	$\overline{\text{CDROM}}$	O	Not used.
39	$\phi 8$	O	$\phi 8$ is 8.4672MHz crystal clock.
40	WDCK	O	Not used.
41	L/R	O	This is synchronizing signal for data transfer and it connects with DAC.
42 43	DGL DGR	O O	Not used.
44 45	DF01 DF00	O O	Serial data output.(Right channel). Serial data output.(Left channel).
46	$\overline{\text{SCK}}$	I	This terminal is connected to μCOM. It is an input terminal that carries the clock signal for data transfers.
47	R/W	I	This connects with microcomputer and it is an output terminal for switching data transmission mode. it enables to transmit data from SVC to microcomputer when R/M is "L" and from microcomputer to SVC when R/W is "H".
48	$\overline{\text{CS}}$	I	This is a chip select terminal for YM7121.
49	DOUT	O	This terminal is the data output terminal connected to μCOM. When R/W is low, data is transferred from YM7121 to μCOM, according to theSCK clock input.

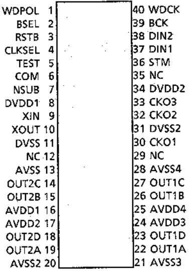
Pin No.	Symbol	I/O	Function and Operation
50	WQ	O	This terminal is connected to μCOM. It is a request signal which demands to μCOM inputting the data transfer (YM7121 to μCOM).
51	DIN	I	This is a data input terminal connected to μCOM. When R/W is high, the data is transferred from μCOM to YM7121 according to the SCK clock input.
53 54	DM + DM −	O O	These terminals output the PWM to control the speed of spindle motor. The speed of the motor goes up when DM + is high, and slows down when DM − is high: both terminals can not become high simultaneously.
55 56 60 61 62 63 64	HF TER TRHD TRGL TROF KP − KP +	I I O O O O O	When tracks are being crossed during serches, the amplitude variation of the generated HF signal is sampled at the zero – cross point of the tracking error signal TER and the TROF signal is output. The level variations of this signal turn the servo on and off, greatly facilitaing track acquisition. KP + or KP − is output to conduct tracking, and TRHD is output during tracking to cause generation of the tracking error signal. The TRGL signal is for increasing the tracking gain after tracking is completed.
57 58 59	FEM + FEM − FEOF	O O O	The FEM + and FEM − are output as high speed feed signals, and FEOF signal is output for cutting the feed servo during high speed feed.
65	TRBK	I	TRBK is input to apply tracking brake from outside. TRGL becomes low with high input and inner control signal TBKE becomes high.
67 68 69	$\overline{\text{FZC}}$ FCS FRF	I O I	These terminals are used for controlling the focus servo. The FCS is for a leading signal of Focusing ; the signal, generated when the focus point is achieved, terminate the focusing operation ; and FCO flag is dropped internally by FRF signal generated when reflected light is detected.
71	$\overline{\text{IC}}$	I	YM7121 needs initializing when power supply turn on. IC will be low more than 400μs since XIN is input clock with VDD standard.
73 74 75	SLVL EFMX $\overline{\text{EFMX}}$	O O O	Amplitude limited, mutually anti-phased signals are output from EFMX and $\overline{\text{EFMX}}$. Slice level is controlled by these signals and external amplifier. SLVL is output amplitude alteration component of both terminals. When integral circuit is connected to external, YM7121 easily can control slice level.
76	EFMI	I	This terminal is input EFM signal. (1 ~ 2 Vpp)
78	PCO	O	This terminal outputs the phase difference when the polarity of the clock and the EFM pattern changes.
79	VPLL	I	This terminal is input D.C. voltage matched VCO free run frequency. (17.2872 MHz)
80	1/2 VPLL	O	This terminal outputs a half of VPLL input, and capacity for stabilizing is added to this terminal.

■JCE4501(IC873) : D / A CONVERTER

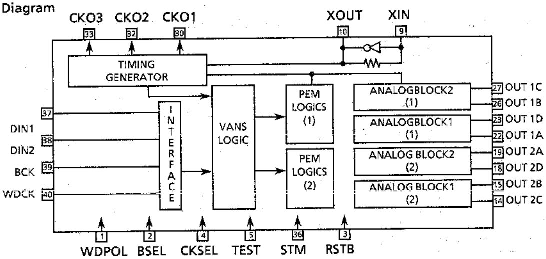
1. Outline

The JCE4501 is a CMOS digital-analog converter with independent left and right channels. It was developed for PCM digital audio equipment.I t features pulse edge modulation (PEM) and Victor advanced noise shaping (VANS) for resolution equipment to 20 bits(0-20kHz) and a low distortion ratio. At JVC, this type of digital-analog converter is called a DD converter.

2. Terminal Layout


WDPOL 1
BSEL 2
RSTB 3
CLKSEL 4
TEST 5
COM 6
NSUB 7
DVDD1 8
XIN 9
XOUT 10
DVSS 11
NC 12
AVSS 13
OUT2C 14
OUT2B 15
AVDD1 16
AVDD2 17
OUT2D 18
OUT2A 19
AVSS2 20
40 WDCK
39 BCK
38 DIN2
37 DIN1
36 STM
35 NC
34 DVDD2
33 CKO3
32 CKO2
31 DVSS2
30 CKO1
29 NC
28 AVSS4
27 OUT1C
26 OUT1B
25 AVDD4
24 AVDD3
23 OUT1D
22 OUT1A
21 AVSS3

3. Block Diagram

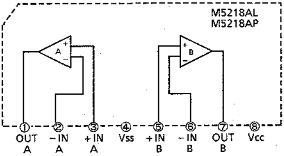

CKO3
CKO2
CKO1
33
32
30
XOUT
XIN
10
9
TIMING GENERATOR
I N T E R F A C E
VANS LOGIC
PEM LOGICS (1)
PEM LOGICS (2)
ANALOGBLOCK2 (1)
ANALOGBLOCK1 (1)
ANALOG BLOCK2 (2)
ANALOG BLOCK1 (2)
27 OUT 1C
26 OUT 1B
23 OUT 1D
22 OUT 1A
19 OUT 2A
18 OUT 2D
15 OUT 2B
14 OUT 2C
37
DIN1
38
DIN2
39
BCK
40
WDCK
1
WDPOL
2
BSEL
4
CKSEL
5
TEST
36
STM
3
RSTB

4.Description

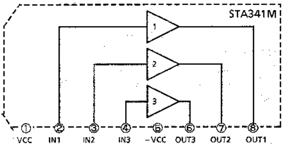
Pin No	Symbol	I/O	Description	Pin No	Symbol	I/O	Description
1	WDPOL	I	Word data polarity switching pin	21	AVSS3	–	Analog ground pin 3
2	BSEL	I	H:CDX2554P format,L: YM3414 format	22	OUT1A	O	Not used
3	RSTB	I	Reset pin (low active)	23	OUT1D	O	1D PEM output pin
4	CLKSEL	I	H: 256fs mode,L: 384fs mode	24	AVDD3	–	Analog power supply pin 3
5	TEST	I	Test mode switching pin	25	AVDD4	–	Analog power supply pin 4
6	COM	I	COM board voltage fastening pin	26	OUT1B	O	Not used
7	NSUB	I	Silicon board voltage fastening pin	27	OUT1C	O	1C PEM output pin
8	DVDD1	–	Digital power supply pin 1	28	AVSS4	–	Analog ground pin 4
9	XIN	I	Crystal oscillator input pin	29	NC	–	To ground
10	XOUT	O	Crystal oscillator output pin	30	CKO1	O	Clock output pin 1(384fs output)
11	DVSS1	–	Digital ground pin 1	31	DVSS2	–	Digital ground pin 2
12	NC	–	To ground	32	CKO2	O	Clock output pin 2(192fs output)
13	AVSS1	–	Analog ground pin 1	33	CKO3	O	Clock output pin 3(128fs output)
14	OUT2C	O	2C PEM output pin	34	DVDD2	–	Digital power supply pin 2
15	OUT2B	O	Not used	35	NC	–	Non connection
16	AVDD1	–	Analog power supply pin 1	36	STM	I	Stereo/Monaural switching pin H: stereo,L:left channel,reversed polarity left channel
17	AVDD2	–	A nalog power supply pin 2	37	DIN1	I	Left channel 18-bits 8Fs serial data input
18	OUT2D	O	2D PEM output pin	38	DIN2	I	Right channel 18-bits 8Fs serial data input
19	OUT2A	O	Not used	39	BCK	I	Bit clock input pin
20	AVSS2	–	Analog ground pin 2	40	WDCK	I	Word clock input pin

Internal Block Diagrams of Other ICs

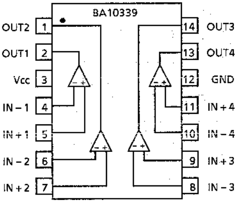
■ M5218AL (IC 762,781,803) M5218AP (IC 871) : Dual OP Amp.


M5218AL
M5218AP
A
B
+
−
① OUT A
② −IN A
③ +IN A
④ Vss
⑤ +IN B
⑥ −IN B
⑦ OUT B
⑧ Vcc

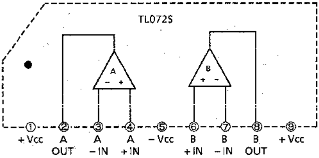
■ STA341M (IC761) : Motor Driver


STA341M
1
2
3
① VCC
② IN1
③ IN2
④ IN3
⑤ −VCC
⑥ OUT3
⑦ OUT2
⑧ OUT1

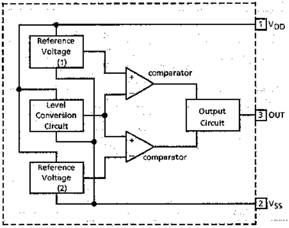
■ XRA10339 (IC802) : Comparator


BA10339
OUT2 1
OUT1 2
Vcc 3
IN − 1 4
IN + 1 5
IN − 2 6
IN + 2 7
14 OUT3
13 OUT4
12 GND
11 IN + 4
10 IN − 4
9 IN + 3
8 IN − 3

■ TL072S (IC801) : Dual OP Amp.


TL072S
A
B
① +Vcc
② A OUT
③ A −IN
④ A +IN
⑤ −Vcc
⑥ B +IN
⑦ B −IN
⑧ B OUT
⑨ +Vcc

■ MN1280 (P.Q). : IC992 RESET IC

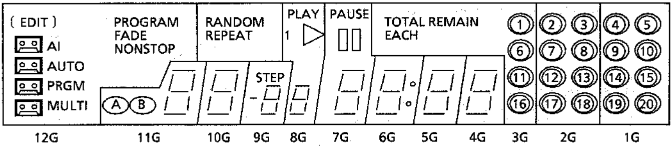

Reference Voltage (1)
Level Conversion Circuit
Reference Voltage (2)
comparator
comparator
Output Circuit
1 V_{DD}
3 OUT
2 V_{SS}

Pin No.	Pin Name	Functions
1	V_{DD}	Power supply
2	V_{SS}	Ground
3	OUT	Reset signal output : Low level is output when resetting : High level is output when cancelling the reset.

Internal Connections for the FL Display Tube

■ ELU0001-140:(FL991)

1. Grid Layout


(EDIT)
AI
AUTO
PRGM
MULTI
PROGRAM
FADE
NONSTOP
A
B
RANDOM
REPEAT
STEP
PLAY
1
PAUSE
TOTAL REMAIN
EACH
①②③④⑤
⑥⑦⑧⑨⑩
⑪⑫⑬⑭⑮
⑯⑰⑱⑲⑳
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G

2. Pin Connections

TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ELECTRODE	F1	F1	NP	NP	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	P8	P7	P6	P5	P4	P3

TERMINAL NO.	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43			
ELECTORODE	P2	P1	NP	1G	2G	3G	4G	P9	5G	6G	7G	8G	9G	10G	11G	12G	NP	NP	F2	F2			

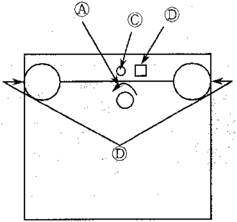
(Note) F : Filament G : Grid NP : NoPin NC : No Connection P1~P9 : Anode

3. Anode Connection Table

	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
S1	AI&MARK	a	a	a	a	a	a	a	a	(1)	(2)	(4)
S2	AUTO&MARK	b	b	b	b	b	b	b	b	(6)	(7)	(9)
S3	PRGM&MARK	c	c	c	c	c	c	c	c	(11)	(12)	(14)
S4	MULTI&MARK	d	d	d	d	d	d	d	d	(16)	(17)	(19)
S5	FADE	e	e	e	e	e	e	e	e	TOTAL	(3)	(5)
S6	NONSTOP	f	f	f	f	f	f	f	f	EACH	(8)	(10)
S7	(EDIT)	g	g	g	g	g	g	g	g	REMAIN	(13)	(15)
S8	PROGRAM	(A)	RANDOM	STEP	REPEAT (1)	----	----	----	----	----	(18)	(20)
S9	----	(B)	REPEAT	(−)	PLAY >	PAUSE	DP(:)	----	----	----	----	----

Disassembly Procedures

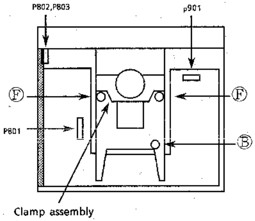
1. Removing the top cover
(1) Remove the 2 screws on both sides of the top cover and the 4 screws on the rear side.
(2) Gently spread both sides of the top cover to the outside, lift up the rear section, and remove the top cover.



2. Removing the tray
(1) Remove the top cover.
(2) Switch on the power of RX-MXG9BK.
Press the OPEN / CLOSE switch to bring the tray forward and with the tray forward, switch off the power.
(3) Remove the screw on the tray Ⓑ.
(4) Pull the tray toward the front to move it.

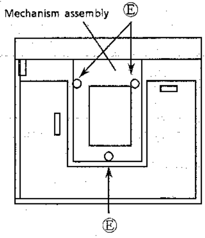
Note

If the power does not come on due to breakdown or the, insert a Philips screwdriver through the hole at the bottom of the front panel and turn it counter-clockwise to bring the tray forward Ⓐ.



3. Removing the front panel assembly
(1) Remove the top cover.
(2) Remove the connectors (P901) connecting with main P.C. Boards.
(3) Remove the screw Ⓒ
(4) Remove the 3 hooks Ⓓ to remove the front panel.

4. Removing the mechanism assembly
(1) Remove the top cover.
(2) Remove the tray.
(3) Remove the connectors (P801, P802,P803).
(4) Remove the 2 screws Ⓕ holding the clamp assembly, then remove it.
(5) Remove the 3 screws Ⓔ holding the mechanism assembly.

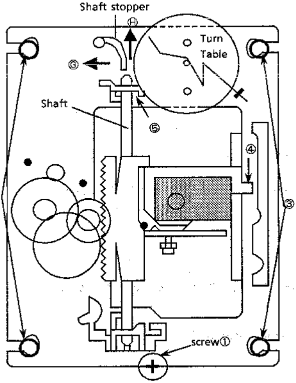


7. Removing the Laser Pickup

1) Remove the metal cover, tray assembly and the clamp.
2) Remove the screw ① from the Mecha Base assembly.
3) Remove the Mecha Base assembly from the rubber cushion ②③.
4) Move the Shaft stopper from the rest position to the left side Ⓖ.
5) Remove the Pickup Shaft from the Mecha Base assembly.(Slide the Pickup shaft to the up sideⒽ)
6) Remove the CD Pick Unit with the shaft.

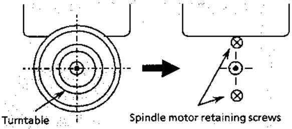
8. Installing the Laser Pickup (See page 1-14) (See page1-15**(Before installing the pickup)**)

1) Connect the Flat wire with the connectors of APC (Automatic Power Control) P.C.Board.
2) While installing the ④ in the CD Support, set the shaft on the base hook⑤.
3) Install the Mecha Base assembly to the rubber cushion ②③.



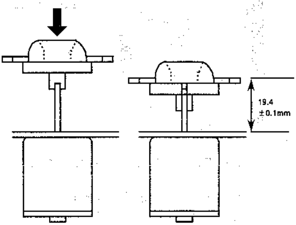
9. Removing the spindle motor

1) Remove the Mechanism assembly.
2) Remove the turntable, and remove the two screws retaining the spindle motor.
3) Remove the screw retaining the spindle and the Feed Motor P.C. Board and unsolder it.

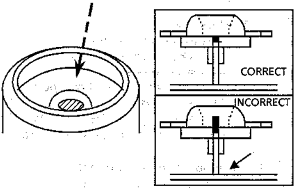


10. Installing the spindle motor

1) Tighten the 2 screws to the same torque.
2) Fasten the Spindle and the Feed Motor P.C. Board with the screw and solder.
3) Install the turntable.When installing, press straight down at the center of the turntable until the distance from the surface of the mechanism base to the top of the turntable is exactly 19.4 ± 0.1mm.

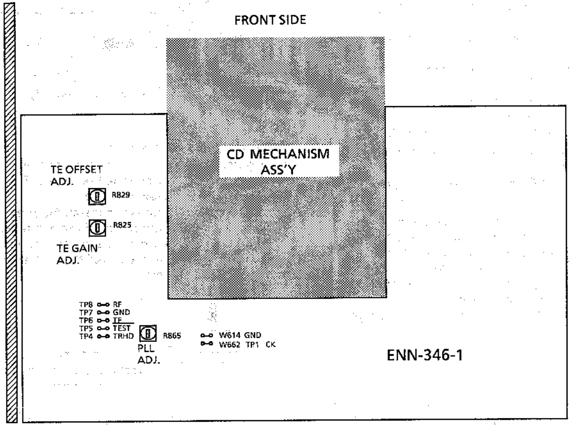


4) After insertion is complete, bond the motor shaft and turntable together (at the section marked by an arrow in the figure on the left below).



5) Use "LOCKTITE" #460 bonding agent, and apply as little as possible. Take care not to allow any excess bonding agent to get onto the turntable. Be extremely careful not to allow bonding agent to adhere to the motor bearings (the section marked by an allow in the figure on the right).

Adjustment Procedures


FRONT SIDE
CD MECHANISM ASS'Y
TE OFFSET ADJ.
R829
R825
TE GAIN ADJ.
TP8 RF
TP7 GND
TP6 TE
TP5 TEST
TP4 TRHD
R865
PLL ADJ.
W614 GND
W662 TP1 CK
ENN-346-1

*** Use RX-MXG9BK when adjusting.**

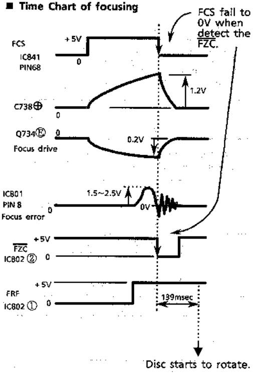
1. PLL free-running adjustment
   1) Measuring instrument
      Frequency counter
   2) Adjusting procedure
      (1) Connect a frequency counter with TP1 (CK:W662) and W614 (GND) on the main PC board.
      (2) Adjust R865 for setting the frequency counter's value becomes 4.295 ± 0.005MHz.

2. Tracking gain adjustment
   1) Measuring instruments
      Oscilloscope, Normal disc
   2) Adjusting procedure
      (1) Connect an oscilloscope with TP6 (TE) and TP7 (GND) on the main PC board.
      (2) Play a disc.
      (3) Short circuit TP5 (TEST) to TP7 (GND).
      (4) Adjust R825 for setting tracking error signal becomes 2.0 V_{P-P}.

3. Tracking offset adjustment
   1) Measuring instruments
      Oscilloscope, Normal disc
   2) Adjusting procedure
      (1) Connect an oscilloscope with TP6 (TE) and TP7 (GND) on the main PC board.
      (2) Play a disc.
      (3) Short circuit TP5 (TEST) to TP7 (GND).
      (4) Adjust R829 for setting the DC level of the tracking error (off set) becomes 0.

Flow of Functional Operation Until TOC is Read

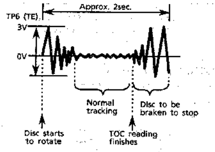
■ Time Chart of focusing



- When the lens moves up and down in a 2-seconds interval, FZC is not output.
- When the lens moves up and down in less than 1-second, FRF is not output or the focus servo loop is abnormal.

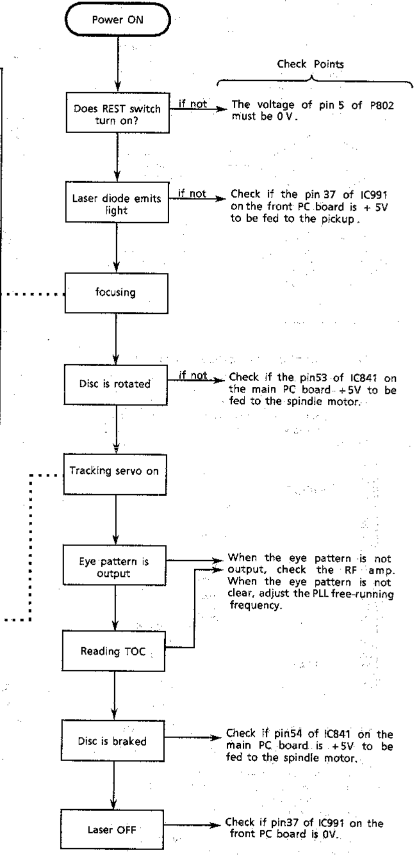
Fig-1

■ Tracking error waveform at TOC reading



■ When the tracking loop does not turn ON, check the tracking offset and align it to 0.

Fig-2


Power ON
Does REST switch turn on?
if not
Laser diode emits light
if not
focusing
Disc is rotated
if not
Tracking servo on
Eye pattern is output
Reading TOC
Disc is braked
Laser OFF
Check Points

The voltage of pin 5 of P802 must be 0 V.

Check if the pin 37 of IC991 on the front PC board is + 5V to be fed to the pickup.

Check if the pin53 of IC841 on the main PC board +5V to be fed to the spindle motor.

When the eye pattern is not output, check the RF amp. When the eye pattern is not clear, adjust the PLL free-running frequency.

Check if pin54 of IC841 on the main PC board is +5V to be fed to the spindle motor.

Check if pin37 of IC991 on the front PC board is 0V.

Maintenance of Laser Pickup

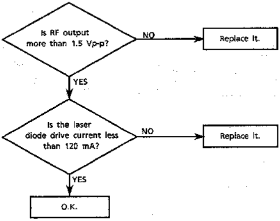
1. Life of the laser diode

When the life of the laser diode has expired, the following symptoms will appear.

(1) The level of RF output (EFM output: amplitude of eye pattern) will be low.

(2)The drive current required by the laser diode will be increased.

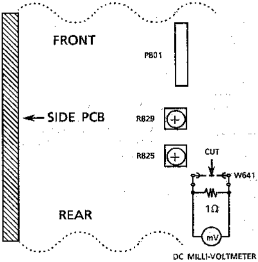
In such a case, check the life of the laser diode following the flowchart below


Is RF output more than 1.5 Vp-p?
NO
Replace It.
YES
Is the laser diode drive current less than 120 mA?
NO
Replace It.
YES
O.K.

2. Measurement of laser diode drive current

Replace the jump wire (W641) shown below with the resistor (1Ω).

Measure the voltage across the resistor with a milli-voltmeter. When the voltage is more than 120mV, it shows that the life of the laser diode has expired



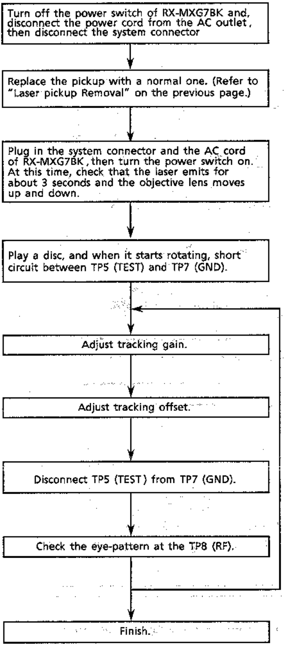
3. Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.

If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.

If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

Replacement of Laser Pickup



Turn off the power switch of RX-MXG7BK and, disconnect the power cord from the AC outlet, then disconnect the system connector

Replace the pickup with a normal one. (Refer to "Laser pickup Removal" on the previous page.)

Plug in the system connector and the AC cord of RX-MXG7BK, then turn the power switch on. At this time, check that the laser emits for about 3 seconds and the objective lens moves up and down.

Play a disc, and when it starts rotating, short circuit between TP5 (TEST) and TP7 (GND).

Adjust tracking gain.

Adjust tracking offset.

Disconnect TP5 (TEST) from TP7 (GND).

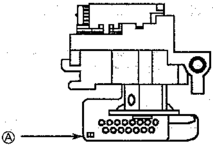
Check the eye-pattern at the TP8 (RF).

Finish.

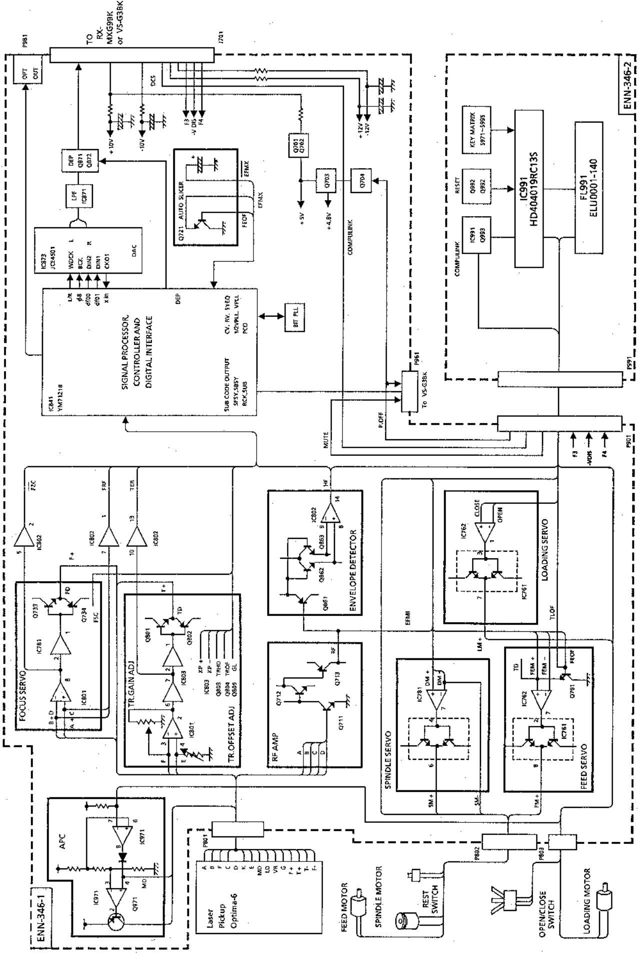
Note : Since one adjustment may affect other settings, repeat these adjustments a few times.

Before installing the pickup

Unsolder the part Ⓐ, which is used for countermeasure for static electricity.



Block Diagram


TO RX-MXG9BK or VS-G3BK
P981
J701
OPT OUT
DCS
F3
-V DIS
F4
+10V
-10V
+12V
-12V
DEP Q871 Q872
LPF IC871
IC873 JCE4501
WDCK
BCK
DIN2
DIN1
CKO1
L
R
DAC
LR
φ8
df00
df01
x in
Q721 AUTO SLICER
EFMX
FEOF
Q701 Q702
Q703
Q704
+5V
+4.8V
COMPULINK
IC841 YM7121B
SIGNAL PROCESSOR, CONTROLLER AND DIGITAL INTERFACE
DEP
CV, RV, SYEQ
1/2VPLL, VPLL
PCO
BIT PLL
SUB CODE OUTPUT
SFSY, SBSY
RCK, SUB
P961
To VS-G3BK
P-OFF
MUTE
ENN-346-2
KEY MATRIX S971~S995
RESET Q992 Q992
COMPULINK IC991 Q993
IC991 HD404019RC13S
FL991 ELU0001-140
P991
P901
F3
-VDIS
F4
FZC
FRF
TER
IC802
5
2
7
1
10
13
F+
FD
Q733
Q734
FSC
IC781
IC801
8
B+D
A+C
FOCUS SERVO
T+
TD
Q801
Q802
IC803
XP+
XP-
TRHD
TROF
GL
IC803
Q803
Q804
Q805
TR.GAIN ADJ
TR.OFFSET ADJ
IC801
E
F
HF
IC802
14
Q863
Q862
Q861
ENVELOPE DETECTOR
RF
Q713
Q712
Q711
RF AMP
A
B
C
D
EFMI
CLOSE
OPEN
IC762
IC761
LOADING SERVO
TLOF
LM+
DM+
DM-
IC781
SPINDLE SERVO
TD
FEM+
FEM-
FEOF
Q761
IC762
IC761
FEED SERVO
SM+
SM-
FM+
APC
IC971
Q971
MD
ENN-346-1
P801
A
B
F
C
D
K
E
MD
LD
VR
G
F+
T+
F-
Laser Pickup Optima-6
P802
P803
FEED MOTOR
SPINDLE MOTOR
REST SWITCH
OPEN/CLOSE SWITCH
LOADING MOTOR

PB1018

SYMBOL NO.

VR301	5K-B	R320	33K 1W	Q301	2SA810
R301	3.3K 1/2W	C301	4.7uF 25V	302	2SA810
302	220 1/2W	302	4.7uF 250V	303	2SC805
303	220 1/2W	303	330pF 50V	304	2SC805
304	22K 1/2W	304	1000pF 100V	305	2SA762
305	22K 1/2W	305	220pF	306	2SC1431
306	15	306	220uF 16V	307	2SC1431
307	15	307	0.22uF 250V	D301	1N4448
308	56K 1/2W	308	1000pF 100V	302	1N4448
309	680 1/2W	309	47pF 100V	303	SV02
310	5.6K	310	47pF 100V	304	SV02
311	5.6K	311	0.1uF 250V	F301	0.5A
312	1.2K 1/2W	312	33uF 100V	302	0.5A
313	390 1W	313	0.1uF 250V		
314	47 1/2W	314	33uF 100V		
315	100 1W	315	100pF 100V		
316	33K 1W	316	0.22uF 250V		
317	47 1/2W	317	0.1uF 250V		
318	47 1/2W	318	0.1uF 250V		
319	100 1W	319	150pF 100V		

SPECIFICATIONS

Power Output:	180 watts minimum continuous per channel into 8-ohm loads both channels driven at any frequency from 20Hz to 20,000Hz with no more than 0.05% total harmonic distortion.
Rated I.M.:	no more than 0.05% (180W/ch, 60Hz : 7KHz = 4 : 1)
Frequency Response:	3 - 100,000Hz (± 1dB)
Input Sensitivity:	1V (8-ohm, 180W/ch, 1KHz)
Input Impedance:	50K ohms
Residual Hum & Noise:	-108dB
Crosstalk:	better than 90dB (vol. max 1KHz) better than 70dB (vol. max 20KHz)
Dimensions:	485(W) x 390(D) x 175(H)mm (19-1/8" x 15-3/8" x 6-7/8")
Weight:	Net 28Kgs (62 lbs.) Gross 31Kgs (68 lbs.)

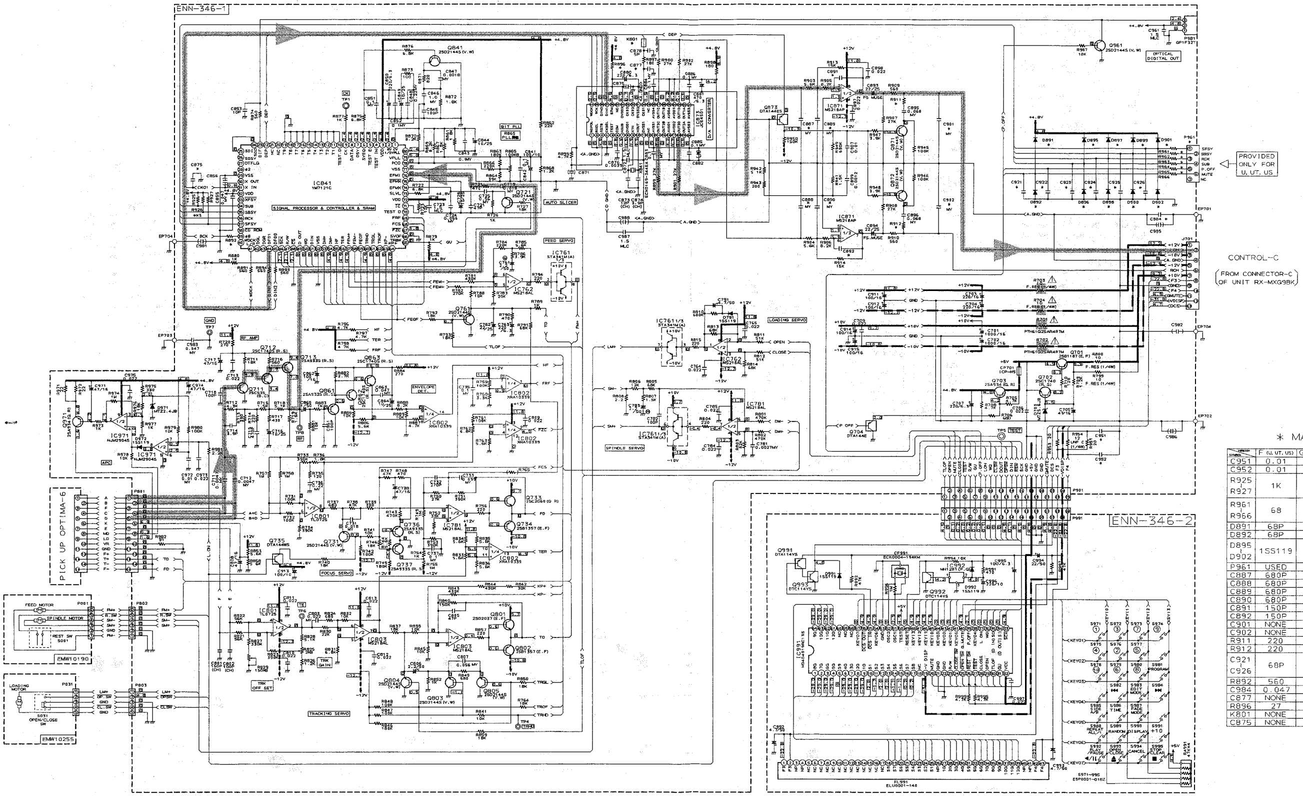
Specifications and appearance design subject to possible change without notice.

Schematic Diagram

■Tuner Section

Notes:

1. ——— indicates + B power supply.
2. ------ indicates − B power supply.
3. ▨ indicates main signal path.
4. When replacing the parts in the shaded are (▨) and those marked with ⚠, be sure to use the designated parts to ensure safety.
5. The design and contents are subject to change without notice.



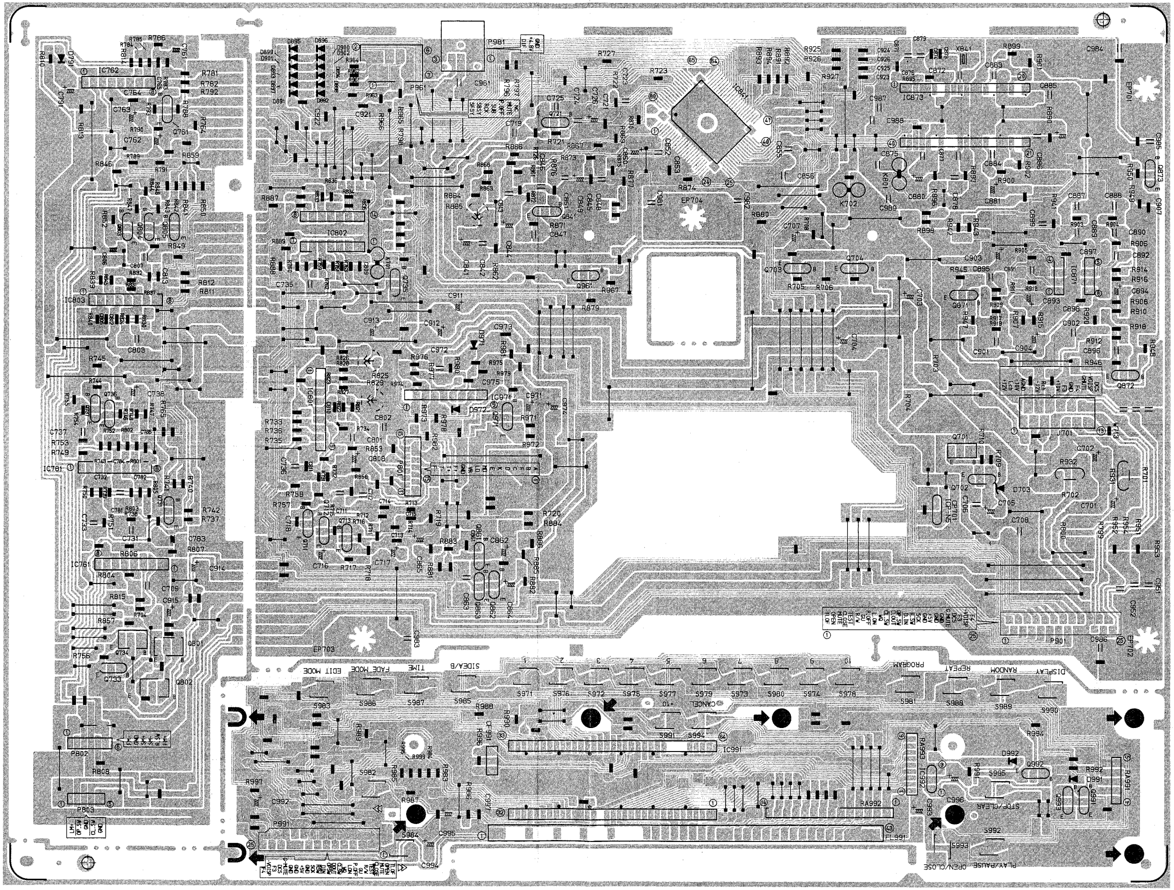
ENN-346-1
ENN-346-2
SIGNAL PROCESSOR & CONTROLLER & SRAM
IC841 YM7121C
FEED SERVO
LOADING SERVO
SPINDLE SERVO
FOCUS SERVO
TRACKING SERVO
RF AMP
AUTO SLICER
ENVELOPE DET.
D/A CONVERTER
OPTICAL DIGITAL OUT
PROVIDED ONLY FOR U, UT, US
CONTROL-C
(FROM CONNECTOR-C OF UNIT RX-MXG9BK)
PICK UP OPTIMA-6
FEED MOTOR
SPINDLE MOTOR
REST SW S001
EMW10190
LOADING MOTOR
S031 OPEN/CLOSE SW
EMW10255
FL991 ELU8001-148
S971~995 ESP0001-018Z
RANDOM
DISPLAY
REPEAT ALL
TIME
EDIT MODE
FADE MODE
PROGRAM
CANCEL
STOP CLEAR
PLAY/PAUSE
OPEN/CLOSE

* MARK

SYMBOL \ VERSION	F (U, UT, US)	G (A, BS, EF, EN)	H (G, GI)
C951	0.01	0.01	NONE
C952	0.01	0.01	NONE
R925 ~ R927	1K	NONE	NONE
R961 ~ R966	68	NONE	NONE
D891	68P	NONE	NONE
D892	68P	NONE	NONE
D895 ~ D902	1SS119	NONE	NONE
P961	USED	NONE	NONE
C887	680P	680P	0.001
C888	680P	680P	0.001
C889	680P	680P	0.0018
C890	680P	680P	0.0018
C891	150P	150P	120P
C892	150P	150P	120P
C901	NONE	NONE	0.012
C902	NONE	NONE	0.012
R911	220	220	180
R912	220	220	180
C921 ~ C926	68P	NONE	NONE
R892	560	560	2.2K
C984	0.047	0.047	NONE
C877	NONE	NONE	18P
R896	27	27	56
K801	NONE	NONE	ENZ8101-007T
C875	NONE	NONE	5P

Printed Circuit Board

■EMW10279-006 ENN-346


IC762
IC803
IC781
IC761
IC802
IC601
IC971
IC861
IC873
IC871
IC991
IC992
P981
P961
P901
P301
P802
P803
P991
EP701
EP702
EP703
EP704
FL991
RA991
RA992
RA993
K701
K702
X841
DISPLAY
RANDOM
REPEAT
PROGRAM
SIDEA/B
TIME
FADE MODE
EDIT MODE
CANCEL
STOP/CLEAR
PLAY/PAUSE
OPEN/CLOSE
S971
S976
S972
S975
S977
S979
S973
S980
S974
S978
S981
S988
S989
S990
S983
S986
S987
S985
S982
S984
S991
S994
S995
S992
S993

PARTS LIST

Note : All printed circuit boards and its assemblies are not available as service parts.

Contents

General Exploded View and Parts List 2-2
CD Mechanism Ass'y and Parts List 2-5
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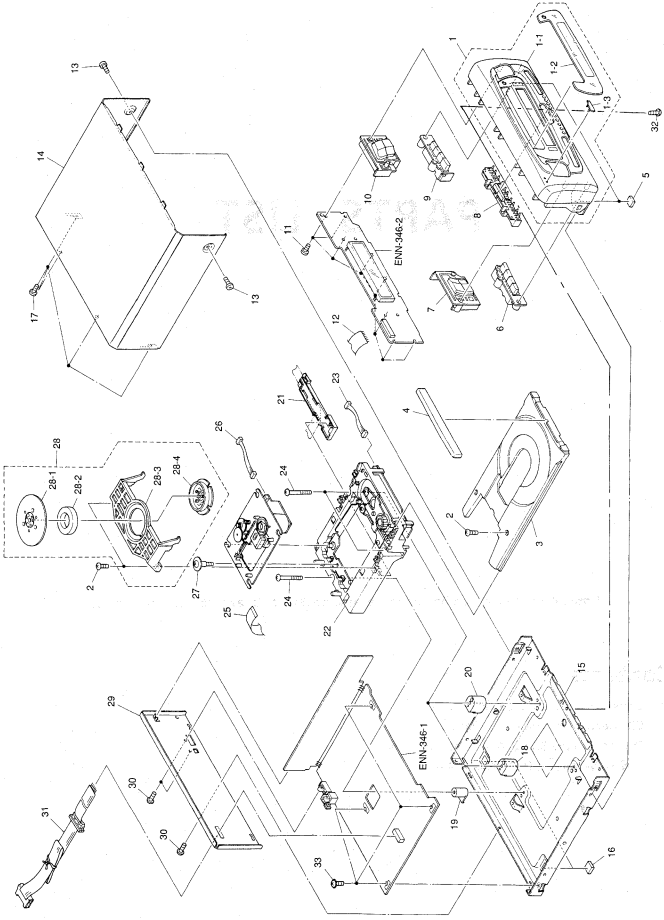
■ENN-346☐ CD PC Board Ass'y 2-7

General Exploded View and Parts List


1
1-1
1-2
1-3
32
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ENN-346-2
7
6
12
13
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17
13
4
21
23
26
28
28-1
28-2
28-3
28-4
24
2
3
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25
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29
ENN-346-1
18
30
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19
31
33
16

■ Parts List

⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	1	EFP-XLMXG9BKE(S	FRONT PANEL ASSY	1		
	1-1	E102630-003	FRONT PANEL	1		
	1-2	E207658-002	CD W.SCREEN	1		
	1-3	E406971-221	JVC MARK	1		
	2	SBSF3008M	SCREW	3		
	3	E102358-222	CD TRAY	1		
	4	E308196-001	C.D FITTING	1		
	5	E406855-008	SPACER	1	FRONT FOOT	
	6	E207631-001	PUSH BUTTON	1	SKIP	
	7	E207627-001	PUSH BUTTON	1	SERACH	
	8	E207635-002	PUSH BUTTON	1	10KEY	
	9	E207633-001	PUSH BUTTON	1	EDIT	
	10	E207629-001	PUSH BUTTON	1	PLAY	
	11	SDSF2608Z	SCREW	8		
	12	EWR125K-15TT	FLAT WIRE	1		
	13	SDSG3008M	SCREW	2		
	14	E207626-001	METAL COVER	1		
	15	E102467-002	CD CHASSIS BASE	1		
	16	E406855-011	SPACER	2	REAR FOOT	
	17	E73273-003	SPECIAL SCREW	4		
	18	E308200-001	STAND	1		
	19	E308201-001	STAND	1		
	20	E308199-001	STAND	1		
	21	E308181-001	F.F.C. HOLDER	1		
	22	---------------	CD MECHANISM ASSY	1	SEE PAGE 2-5	
	23	EWS265-B410	SOCKET WIRE	1		
	24	SBST3027Z	SCREW	3		
	25	EWPZ02-001	15PIN FFC CABLE	1		
	26	EWS266-B411	SOCKET WIRE	1		
	27	E406293-001	SPECIAL SCREW	1		
	28	E306837-005	C.D CLAMPER ASSY	1		
	28-1	E306836-003	C.D YOKE	1		
	28-2	E74897-002	C.D MAGNET	1		
	28-3	E26756-002	CD CLAMPER BASE	1		
	28-4	E306835-001	C.D CLAMPER	1		
	29	E207637-006	REAR PANEL	1		A
	29	E207637-006	REAR PANEL	1		BS
	29	E207637-006	REAR PANEL	1		EF
	29	E207637-006	REAR PANEL	1		EN
	29	E207637-006	REAR PANEL	1		G
	29	E207637-006	REAR PANEL	1		GI
	29	E207637-005	REAR PANEL	1		U
	29	E207637-005	REAR PANEL	1		US
	29	E207637-005	REAR PANEL	1		UT
	30	SBSG3008CC	SCREW	2		A
	30	SBSG3008CC	SCREW	2		BS
	30	SBSG3008CC	SCREW	2		EF
	30	SBSG3008CC	SCREW	2		EN
	30	SBSG3008CC	SCREW	2		G
	30	SBSG3008CC	SCREW	2		GI

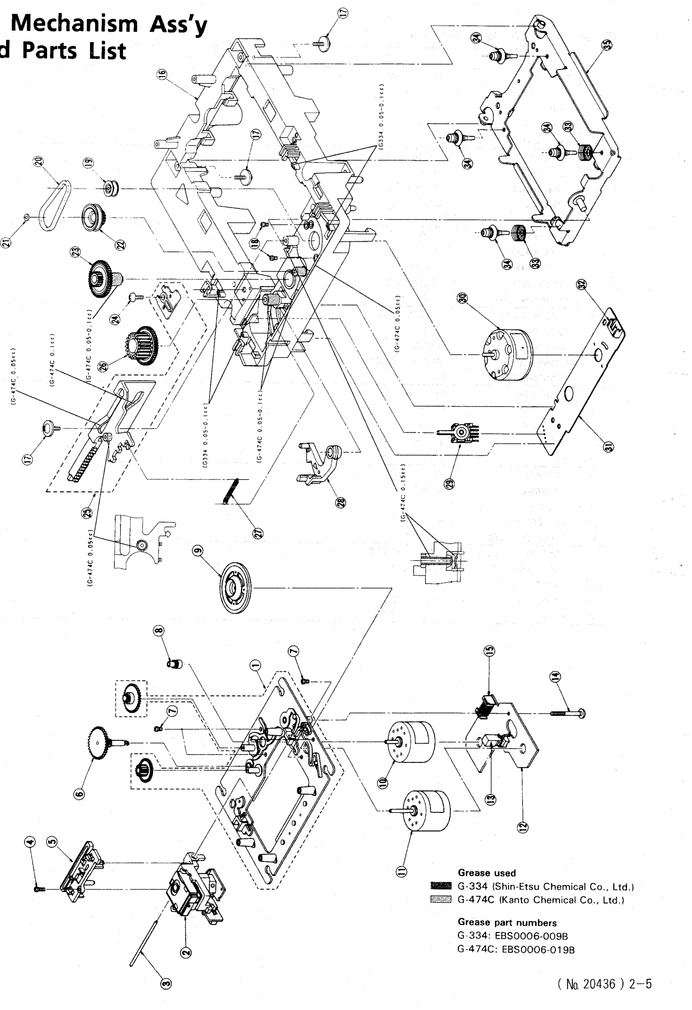
⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	30	SBSG3008CC	SCREW	3		U
	30	SBSG3008CC	SCREW	3		US
	30	SBSG3008CC	SCREW	3		UT
	31	EWP907-016	PLUG CORD	1		
	32	SSST3006M	SCREW	1		
	33	GBSG3008CC	SCREW	4		
	-	E61029-005	NUMBER LABEL	1		
	-	E61029-011	NUMBER LABEL	1		
	-	E70891-001	CLASS 1 LABEL	1		
	-	E406507-001	MECHA C.LABEL	1		

⚠ : Parts List

The Marks for Designated Areas

A ..... Australia
EN .... ScandinaviaU
U ..... Universal Type
BS .... the U.K.
G ..... Germany
US .... Singapore
EF ..... Continental Europe
GI ... Italy
UT .... Taiwan

CD Mechanism Ass'y and Parts List


⑰
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(G334 0.05~0.1cc)
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⑲
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㉔
(G-474C 0.05cc)
(G-474C 0.05~0.1cc)
(G-474C 0.1cc)
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(G334 0.05~0.1cc)
(G-474C 0.05~0.1cc)
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(G-474C 0.15cc)
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③

Grease used

■ G-334 (Shin-Etsu Chemical Co., Ltd.)

▨ G-474C (Kanto Chemical Co., Ltd.)

Grease part numbers

G-334: EBS0006-009B

G-474C: EBS0006-019B

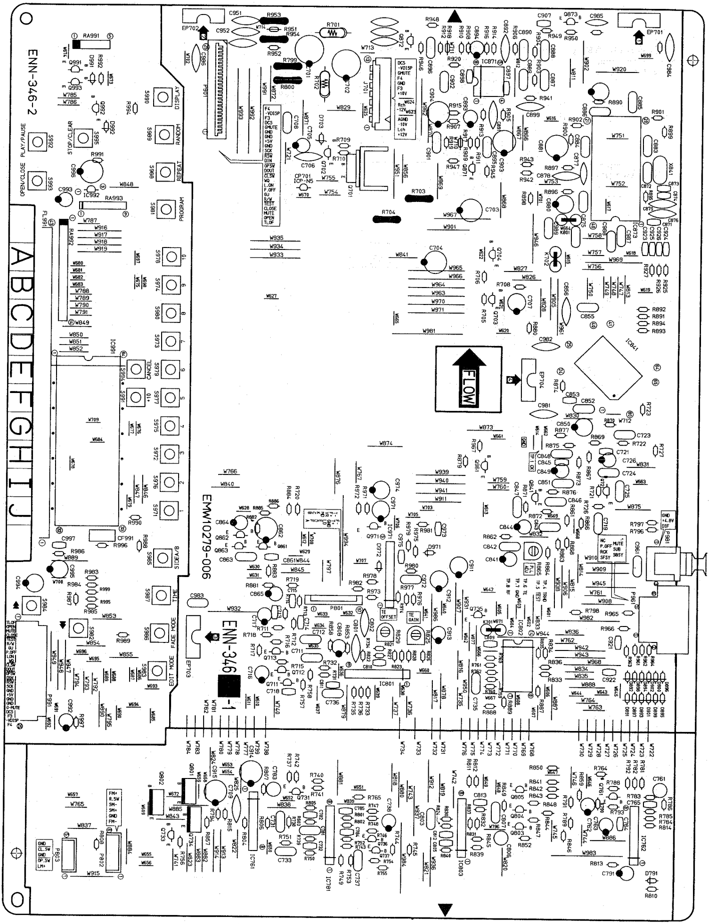
■ Parts List (CD Mechanism Ass'y)

Item	Part Number	Part Name	Q'ty	Description	Area
1	EPB-002A	MECHANISM BASE ASSY	1		
2	OPTIMA-6S	PICK UP ASS'Y	1		
3	E406777-001	SHAFT	1		
4	SDSF2006Z	SCREW	1		
5	E307746-001	CD RACK	1		
6	EPB-003A	MECHANISM BASE ASSY	1		
7	SDSP2003N	SCREW	4		
8	E406750-001	PINION GEAR	1		
9	EPB-001C	TURNTABLE	1		
10	E406784-001	DC MOTOR	1		
11	E406783-001	DC MOTOR	1		
12	EMW10190-001(S)	CIRCUIT BOARD	1		
13	ESB1100-005	LEAF SWITCH	1		
14	E75832-001	SPECIAL SCREW	1		
15	EMV5109-006B	PLUG ASSY	1	6PIN	
16	E102357-221	LOADING BASE	1		
17	E65923-003	SCREW	3		
18	SPSK2640Z	SCREW	2		
19	E75984-001	MOTOR PULLEY	1		
20	E75950-002	BELT	1		
21	E72024-001	SPEED NUT	1		
22	E75985-001	GEAR	1		
23	E75986-002	GEAR	1		
24	SBSF3008Z	SCREW	1		
25	E307252-221	CAM - PLATE	1		
26	E75987-001	REEL GEAR	1		
27	E75989-001	SPRING	1		
28	E307162-221	LEVER	1		
29	ESS1200-002	SLIDE SWITCH	1		
30	RF-500TB-12560	MOTOR	1		
31	EMW10255-002(S)	CIRCUIT BOARD	1		
32	EMV5109-005B	PLUG ASSY	1	5PIN	
33	E406871-001	SPRING	2		
34	E406294-002	INSULATOR	4		
35	E307179-221	ELEVATOR BASE ASSY	1		

Printed Circuit Board Ass'y and Parts List

■ENN-346 ☐ CD PC Board Ass'y

Note : ENN-346 ☐ varies according to the areas employed. See note (1) when placing an order.


ENN-346-2
ENN-346■-1
EMW10279-006
FLOW
A
B
C
D
E
F
G
H
I
J
OPEN/CLOSE
PLAY/PAUSE
STOP/CLEAR
DISPLAY
RANDOM
REPEAT
PROGRAM
CANCEL
+10
SIDEA/B
TIME
FADE MODE
EDIT MODE
EP701
EP702
EP703
EP704
IC841
IC871
IC801
IC802
IC803
IC761
IC762
IC781
IC991
IC992
IC971
FL991
CF991
P801
P802
P803
P901
P961
P981
P991
J701
TE OFFSET
TE GAIN
FM+
R.SW
SM-
SM+
GND
FM-
GND
CL.SW
GND
OP.SW
LM+
GND
+4.8V
D1F
NC
P.OFF
RCK
SFSY
MUTE
SUB
SBSY
DCS
-VD15P
GMUTE
F4
GND
F3
+10V
Rch
-12V
AGND
-10V
Lch
+12V

Note (1)

PC Board Ass'y	Version	Designated Areas
ENN-346 F	U US UT	Universal Type Singapore Taiwan
ENN-346 G	A BS EF EN	Australia the U.K. Continental Europe Scandinavia
ENN-346 H	G GI	Germany Italy

TRANSISTORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	Q701	2SB1187(E,F)	SILICON	
	Q702	2SC1740(R,S)	SILICON ROHM	
	Q703	2SA934(Q,R)	SILICON ROHM	
	Q704	DTA144ES	SILICON ROHM	
	Q711	2SC535(B,C)	SILICON	
	Q712	2SC1740S(R,S)	SILICON ROHM	
	Q713	2SA933S(R,S)	SILICON	
	Q721	2SD2144S(VW)	SILICON ROHM	
	Q731	2SD2144S(VW)	SILICON ROHM	
	Q733	2SC2060(Q,R)	SILICON ROHM	
	Q734	2SB1357(E,F)	SILICON ROHM	
	Q735	DTA144WS	SILICON ROHM	
	Q736	2SA933S(R,S)	SILICON	
	Q737	2SA933S(R,S)	SILICON	
	Q761	2SD2144S(VW)	SILICON ROHM	
	Q801	2SD2037(E,F)	SILICON ROHM	
	Q802	2SB1357(E,F)	SILICON ROHM	
	Q803	2SD2144S(VW)	SILICON ROHM	
	Q804	2SD2144S(VW)	SILICON ROHM	
	Q805	2SD2144S(VW)	SILICON ROHM	
	Q841	2SD2144S(VW)	SILICON ROHM	
	Q861	2SA933S(R,S)	SILICON	
	Q862	2SC1740S(R,S)	SILICON ROHM	
	Q863	2SC1740S(R,S)	SILICON ROHM	
	Q871	2SD2144S(VW)	SILICON ROHM	
	Q872	2SD2144S(VW)	SILICON ROHM	
	Q873	DTA144ES	SILICON ROHM	
	Q961	2SD2144S(VW)	SILICON ROHM	
	Q971	2SA934(Q,R)	SILICON ROHM	
	Q991	DTA114YS	SILICON ROHM	
	Q992	DTC114YS	SILICON ROHM	
	Q993	DTC114YS	SILICON ROHM	

I. C. S.

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC761	STA341M(A)	I.C. SANKEN	
	IC762	M5218AL	I.C. MITSUBISHI	
	IC781	M5218AL	I.C. MITSUBISHI	
	IC801	NJM072S	I.C. DAINICHI	
	IC802	XRA10339	I.C. EXAR JAPAN	
	IC803	M5218AL	I.C. MITSUBISHI	
	IC841	YM7121C	I.C. YAMAHA	
	IC871	M5218AP	I.C. MITSUBISHI	
	IC873	JCE4501	I.C. MATSUSHITA	
	IC971	NJM2904S	I.C. DAINICHI	
	IC991	HD404019RC13S	I.C. HITACHI	
	IC992	MN1281(P,Q)	I.C. MATSUSHITA	

⚠ : SAFETY PARTS

DIODES

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	D703	MTZ5.6JB	ZENER ROHM	
	D791	1SS119	SILICON HITACHI	
	D891	1SS119	SILICON HITACHI	U
	D891	1SS119	SILICON HITACHI	US
	D891	1SS119	SILICON HITACHI	UT
	D892	1SS119	SILICON HITACHI	U
	D892	1SS119	SILICON HITACHI	US
	D892	1SS119	SILICON HITACHI	UT
	D895	1SS119	SILICON HITACHI	U
	D895	1SS119	SILICON HITACHI	US
	D895	1SS119	SILICON HITACHI	UT
	D896	1SS119	SILICON HITACHI	U
	D896	1SS119	SILICON HITACHI	US
	D896	1SS119	SILICON HITACHI	UT
	D897	1SS119	SILICON HITACHI	U
	D897	1SS119	SILICON HITACHI	US
	D897	1SS119	SILICON HITACHI	UT
	D898	1SS119	SILICON HITACHI	U
	D898	1SS119	SILICON HITACHI	US
	D898	1SS119	SILICON HITACHI	UT
	D899	1SS119	SILICON HITACHI	U
	D899	1SS119	SILICON HITACHI	US
	D899	1SS119	SILICON HITACHI	UT
	D900	1SS119	SILICON HITACHI	U
	D900	1SS119	SILICON HITACHI	US
	D900	1SS119	SILICON HITACHI	UT
	D901	1SS119	SILICON HITACHI	U
	D901	1SS119	SILICON HITACHI	US
	D901	1SS119	SILICON HITACHI	UT
	D902	1SS119	SILICON HITACHI	U
	D902	1SS119	SILICON HITACHI	US
	D902	1SS119	SILICON HITACHI	UT
	D971	MTZ2.4JB	ZENER ROHM	
	D972	1SS119	SILICON HITACHI	
	D991	1SS119	SILICON HITACHI	
	D992	1SS119	SILICON HITACHI	

CAPACITORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C701	QETB1CM-108N	1000MF 16V ELECTRO	
	C702	QETB1CM-108N	1000MF 16V ELECTRO	
	C703	QET41CM-227	220MF 16V ELECTRO	
	C704	QET41CM-227	220MF 16V ELECTRO	
	C705	QET41CM-476	47MF 16V ELECTRO	
	C706	QCF11HP-223	0.022MF 50V CERAMIC	
	C707	QETB0JM-227	220MF 6.3V ELECTRO	
	C709	QCF11HP-223	0.022MF 50V CERAMIC	
	C711	QFN81HJ-472	4700PF 50V MYLAR	
	C712	QFN81HJ-472	4700PF 50V MYLAR	
	C713	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C714	QCSB1HK-3R9	3.9PF 50V CERAMIC	
	C715	QCBB1HK-471	470PF 50V CERAMIC	
	C716	QET41EM-106	10MF 25V ELECTRO	
	C717	QET41CM-476	47MF 16V ELECTRO	
	C718	QCBB1HK-101	100PF 50V CERAMIC	
	C719	QFN81HJ-183	0.018MF 50V MYLAR	
	C721	QCS11HJ-470	47PF 50V CERAMIC	
	C723	QCZ0202-155	1.5MF 25V CERAMIC	
	C724	QFN81HJ-563	0.056MF 50V MYLAR	
	C725	QFVB1HJ-564N	0.56MF 50V T.FILM	
	C726	QET41EM-106	10MF 25V ELECTRO	
	C731	QFN81HJ-183	0.018MF 50V MYLAR	
	C732	QCBB1HK-271	270PF 50V CERAMIC	
	C733	QFN81HJ-393	0.039MF 50V MYLAR	
	C735	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C736	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C737	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C738	QET41CM-476	47MF 16V ELECTRO	
	C761	QEN41HM-225	2.2MF 50V NON POLE	

⚠ : SAFETY PARTS

CAPACITORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C762	QETB1EM-226	22MF 25V ELECTRO	
	C763	QETB0JM-227	220MF 6.3V ELECTRO	
	C764	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C765	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C781	QFN81HJ-272	2700PF 50V MYLAR	
	C782	QCBB1HK-101	100PF 50V CERAMIC	
	C783	QEN41HM-225	2.2MF 50V NON POLE	
	C784	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C785	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C791	QET41HM-475	4.7MF 50V ELECTRO	
	C801	QCT26CH-151	150PF 50V CERAMIC	
	C802	QCT26CH-101	100PF 50V CERAMIC	
	C803	QFN81HJ-223	0.022MF 50V MYLAR	
	C805	QCS11HJ-470	47PF 50V CERAMIC	
	C806	QEN41HM-225	2.2MF 50V NON POLE	
	C807	QFN81HJ-563	0.056MF 50V MYLAR	
	C808	QET41CM-476	47MF 16V ELECTRO	
	C809	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C810	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C811	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C812	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C813	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C841	QET41AM-107	100MF 10V ELECTRO	
	C842	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C843	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C844	QET41EM-106	10MF 25V ELECTRO	
	C845	QCBB1HK-101	100PF 50V CERAMIC	
	C846	QFVB1HJ-105N	1MF 50V T.FILM	
	C847	QFN81HJ-182	1800PF 50V MYLAR	
	C848	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C849	QET41EM-106	10MF 25V ELECTRO	
	C850	QETB0JM-227	220MF 6.3V ELECTRO	
	C851	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C852	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C853	QCSB1HJ-100	10PF 50V CERAMIC	
	C855	QFN41HJ-473	0.047MF 50V MYLAR	
	C861	QCBB1HK-101	100PF 50V CERAMIC	
	C862	QER61CM-107ZM	100MF 16V ELECTRO	
	C863	QFN41HJ-473	0.047MF 50V MYLAR	
	C864	QER51EM-106	10MF 25V ELECTRO	
	C865	QET41HM-105	1MF 50V ELECTRO	
	C872	QCZ0202-155	1.5MF 25V CERAMIC	
	C873	QCT30CH-120	12PF 50V CERAMIC	
	C874	QCT30CH-3R9	3.9PF 50V CERAMIC	
	C875	QCS21HJ-5R0	5PF 50V CERAMIC	G
	C875	QCS21HJ-5R0	5PF 50V CERAMIC	GI
	C876	QCY21HK-392	3900PF 50V CERAMIC	
	C877	QCS21HJ-180	18PF 50V CERAMIC	G
	C877	QCS21HJ-180	18PF 50V CERAMIC	GI
	C878	QCS21HJ-5R0	5PF 50V CERAMIC	
	C880	QETB0JM-227	220MF 6.3V ELECTRO	
	C881	QETB0JM-477	470MF 6.3V ELECTRO	
	C883	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C884	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C885	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C886	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C887	QFN81HJ-681	680PF 50V MYLAR	A
	C887	QFN81HJ-681	680PF 50V MYLAR	BS
	C887	QFN81HJ-681	680PF 50V MYLAR	EF
	C887	QFN81HJ-681	680PF 50V MYLAR	EN
	C887	QFN81HJ-102	1000PF 50V MYLAR	G
	C887	QFN81HJ-102	1000PF 50V MYLAR	GI
	C887	QFN81HJ-681	680PF 50V MYLAR	U
	C887	QFN81HJ-681	680PF 50V MYLAR	US
	C887	QFN81HJ-681	680PF 50V MYLAR	UT
	C888	QFN81HJ-681	680PF 50V MYLAR	A
	C888	QFN81HJ-681	680PF 50V MYLAR	BS
	C888	QFN81HJ-681	680PF 50V MYLAR	EF
	C888	QFN81HJ-681	680PF 50V MYLAR	EN
	C888	QFN81HJ-102	1000PF 50V MYLAR	G
	C888	QFN81HJ-102	1000PF 50V MYLAR	GI
	C888	QFN81HJ-681	680PF 50V MYLAR	U
	C888	QFN81HJ-681	680PF 50V MYLAR	US
	C888	QFN81HJ-681	680PF 50V MYLAR	UT
	C889	QFN81HJ-681	680PF 50V MYLAR	A
	C889	QFN81HJ-681	680PF 50V MYLAR	BS
	C889	QFN81HJ-681	680PF 50V MYLAR	EF
	C889	QFN81HJ-681	680PF 50V MYLAR	EN
	C889	QFN81HJ-182	1800PF 50V MYLAR	G
	C889	QFN81HJ-182	1800PF 50V MYLAR	GI
	C889	QFN81HJ-681	680PF 50V MYLAR	U
	C889	QFN81HJ-681	680PF 50V MYLAR	US
	C889	QFN81HJ-681	680PF 50V MYLAR	UT
	C890	QFN81HJ-681	680PF 50V MYLAR	A
	C890	QFN81HJ-681	680PF 50V MYLAR	BS
	C890	QFN81HJ-681	680PF 50V MYLAR	EF
	C890	QFN81HJ-681	680PF 50V MYLAR	EN
	C890	QFN81HJ-182	1800PF 50V MYLAR	G
	C890	QFN81HJ-182	1800PF 50V MYLAR	GI
	C890	QFN81HJ-681	680PF 50V MYLAR	U

⚠ : SAFETY PARTS

CAPACITORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C890	QFN81HJ-681	680PF 50V MYLAR	US
	C890	QFN81HJ-681	680PF 50V MYLAR	UT
	C891	QCS11HJ-151	150PF 50V CERAMIC	A
	C891	QCS11HJ-151	150PF 50V CERAMIC	BS
	C891	QCS11HJ-151	150PF 50V CERAMIC	EF
	C891	QCS11HJ-151	150PF 50V CERAMIC	EN
	C891	QCS21HJ-121	120PF 50V CERAMIC	G
	C891	QCS21HJ-121	120PF 50V CERAMIC	GI
	C891	QCS11HJ-151	150PF 50V CERAMIC	U
	C891	QCS11HJ-151	150PF 50V CERAMIC	US
	C891	QCS11HJ-151	150PF 50V CERAMIC	UT
	C892	QCS11HJ-151	150PF 50V CERAMIC	A
	C892	QCS11HJ-151	150PF 50V CERAMIC	BS
	C892	QCS11HJ-151	150PF 50V CERAMIC	EF
	C892	QCS11HJ-151	150PF 50V CERAMIC	EN
	C892	QCS21HJ-121	120PF 50V CERAMIC	G
	C892	QCS21HJ-121	120PF 50V CERAMIC	GI
	C892	QCS11HJ-151	150PF 50V CERAMIC	U
	C892	QCS11HJ-151	150PF 50V CERAMIC	US
	C892	QCS11HJ-151	150PF 50V CERAMIC	UT
	C893	EEZ2505-226	22MF ELECTRO	
	C894	EEZ2505-226	22MF ELECTRO	
	C895	QFN81HJ-683	0.068MF 50V MYLAR	
	C896	QFN81HJ-683	0.068MF 50V MYLAR	
	C897	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C898	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C899	QCY21HK-122	1200PF 50V CERAMIC	
	C901	QFN81HJ-123	0.012MF 50V MYLAR	G
	C901	QFN81HJ-123	0.012MF 50V MYLAR	GI
	C902	QFN81HJ-123	0.012MF 50V MYLAR	G
	C902	QFN81HJ-123	0.012MF 50V MYLAR	GI
	C907	QCVB1CM-103	0.01MF 16V CERAMIC	
	C911	QET41CM-107	100MF 16V ELECTRO	
	C912	QET41CM-107	100MF 16V ELECTRO	
	C913	QET41AM-107	100MF 10V ELECTRO	
	C914	QET41CM-107	100MF 16V ELECTRO	
	C915	QET41CM-107	100MF 16V ELECTRO	
	C921	QCSB1HJ-680	68PF 50V CERAMIC	U
	C921	QCSB1HJ-680	68PF 50V CERAMIC	US
	C921	QCSB1HJ-680	68PF 50V CERAMIC	UT
	C922	QCSB1HJ-680	68PF 50V CERAMIC	U
	C922	QCSB1HJ-680	68PF 50V CERAMIC	US
	C922	QCSB1HJ-680	68PF 50V CERAMIC	UT
	C923	QCSB1HJ-680	68PF 50V CERAMIC	U
	C923	QCSB1HJ-680	68PF 50V CERAMIC	US
	C923	QCSB1HJ-680	68PF 50V CERAMIC	UT
	C924	QCSB1HJ-680	68PF 50V CERAMIC	U
	C924	QCSB1HJ-680	68PF 50V CERAMIC	US
	C924	QCSB1HJ-680	68PF 50V CERAMIC	UT
	C925	QCSB1HJ-680	68PF 50V CERAMIC	U
	C925	QCSB1HJ-680	68PF 50V CERAMIC	US
	C925	QCSB1HJ-680	68PF 50V CERAMIC	UT
	C926	QCSB1HJ-680	68PF 50V CERAMIC	U
	C926	QCSB1HJ-680	68PF 50V CERAMIC	US
	C926	QCSB1HJ-680	68PF 50V CERAMIC	UT
	C951	QCY21HK-103	0.01MF 50V CERAMIC	A
	C951	QCY21HK-103	0.01MF 50V CERAMIC	BS
	C951	QCY21HK-103	0.01MF 50V CERAMIC	EF
	C951	QCY21HK-103	0.01MF 50V CERAMIC	EN
	C951	QCY21HK-103	0.01MF 50V CERAMIC	U
	C951	QCY21HK-103	0.01MF 50V CERAMIC	US
	C951	QCY21HK-103	0.01MF 50V CERAMIC	UT
	C952	QCY21HK-103	0.01MF 50V CERAMIC	A
	C952	QCY21HK-103	0.01MF 50V CERAMIC	BS
	C952	QCY21HK-103	0.01MF 50V CERAMIC	EF
	C952	QCY21HK-103	0.01MF 50V CERAMIC	EN
	C952	QCY21HK-103	0.01MF 50V CERAMIC	U
	C952	QCY21HK-103	0.01MF 50V CERAMIC	US
	C952	QCY21HK-103	0.01MF 50V CERAMIC	UT
	C961	QCZ0202-155	1.5MF 25V CERAMIC	
	C971	QER41CM-476	47MF 16V ELECTRO	
	C972	QFN81HJ-103	0.01MF 50V MYLAR	
	C973	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C974	QER41CM-476	47MF 16V ELECTRO	
	C975	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C983	QFN41HJ-473	0.047MF 50V MYLAR	
	C984	QCF11HP-473	0.047MF 50V CERAMIC	A
	C984	QCF11HP-473	0.047MF 50V CERAMIC	BS
	C984	QCF11HP-473	0.047MF 50V CERAMIC	EF
	C984	QCF11HP-473	0.047MF 50V CERAMIC	EN
	C984	QCF11HP-473	0.047MF 50V CERAMIC	U
	C984	QCF11HP-473	0.047MF 50V CERAMIC	US
	C984	QCF11HP-473	0.047MF 50V CERAMIC	UT
	C987	QCZ0202-155	1.5MF 25V CERAMIC	
	C992	QER51HM-475	4.7MF 50V ELECTRO	
	C993	QER51HM-475	4.7MF 50V ELECTRO	
	C994	QEK51HM-226	22MF 50V ELECTRO	
	C995	QER40JM-107	100MF 6.3V ELECTRO	
	C996	QER61AM-227ZM	220MF 10V ELECTRO	
	C997	QCHB1EZ-223	0.022MF 25V CERAMIC	

⚠ : SAFETY PARTS

RESISTORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
⚠	R701	PTH61G25AR4R7M	POSISTOR I	.M
⚠	R702	PTH61G25AR4R7M	POSISTOR I	.M
⚠	R703	QRZ0077-100	10 1/4W FUSIBLE	
⚠	R704	QRZ0077-100	10 1/4W FUSIBLE	
	R705	QRD167J-472	4.7K 1/6W CARBON	
	R706	QRD167J-681	680 1/6W CARBON	
	R708	QRD167J-472	4.7K 1/6W CARBON	
	R709	QRD167J-122	1.2K 1/6W CARBON	
	R710	QRD167J-121	120 1/6W CARBON	
	R711	QRD167J-183	18K 1/6W CARBON	
	R712	QRD167J-432	4.3K 1/6W CARBON	
	R713	QRD167J-391	390 1/6W CARBON	
	R714	QRD167J-221	220 1/6W CARBON	
	R715	QRD167J-152	1.5K 1/6W CARBON	
	R716	QRD167J-561	560 1/6W CARBON	
	R717	QRD167J-431	430 1/6W CARBON	
	R718	QRD167J-512	5.1K 1/6W CARBON	
	R719	QRD167J-152	1.5K 1/6W CARBON	
	R720	QRD167J-271	270 1/6W CARBON	
	R721	QRD167J-471	470 1/6W CARBON	
	R722	QRD167J-682	6.8K 1/6W CARBON	
	R723	QRD167J-103	10K 1/6W CARBON	
	R726	QRD167J-102	1K 1/6W CARBON	
	R727	QRD167J-183	18K 1/6W CARBON	
	R731	QRD167J-104	100K 1/6W CARBON	
	R732	QRD167J-104	100K 1/6W CARBON	
	R733	QRD167J-394	390K 1/6W CARBON	
	R734	QRD167J-394	390K 1/6W CARBON	
	R735	QRD167J-121	120 1/6W CARBON	
	R736	QRD167J-182	1.8K 1/6W CARBON	
	R737	QRD167J-681	680 1/6W CARBON	
	R738	QRD167J-473	47K 1/6W CARBON	
	R739	QRD167J-331	330 1/6W CARBON	
	R740	QRD167J-183	18K 1/6W CARBON	
	R741	QRD167J-103	10K 1/6W CARBON	
	R742	QRD167J-104	100K 1/6W CARBON	
	R743	QRD167J-474	470K 1/6W CARBON	
	R744	QRD167J-562	5.6K 1/6W CARBON	
	R745	QRD167J-184	180K 1/6W CARBON	
	R746	QRD167J-183	18K 1/6W CARBON	
	R747	QRD167J-473	47K 1/6W CARBON	
	R748	QRD167J-471	470 1/6W CARBON	
	R749	QRD167J-105	1M 1/6W CARBON	
	R750	QRD167J-273	27K 1/6W CARBON	
	R751	QRD167J-394	390K 1/6W CARBON	
	R752	QRD167J-333	33K 1/6W CARBON	
	R753	QRD167J-394	390K 1/6W CARBON	
	R754	QRD167J-102	1K 1/6W CARBON	
	R755	QRD167J-105	1M 1/6W CARBON	
	R756	QRD167J-221	220 1/6W CARBON	
	R757	QRD167J-105	1M 1/6W CARBON	
	R758	QRD167J-105	1M 1/6W CARBON	
	R759	QRD167J-104	100K 1/6W CARBON	
	R760	QRD167J-332	3.3K 1/6W CARBON	
	R761	QRD167J-104	100K 1/6W CARBON	
	R762	QRD167J-682	6.8K 1/6W CARBON	
	R763	QRD167J-562	5.6K 1/6W CARBON	
	R764	QRD167J-183	18K 1/6W CARBON	
	R781	QRD167J-434	430K 1/6W CARBON	
	R782	QRD167J-274	270K 1/6W CARBON	
	R783	QRD167J-203	20K 1/6W CARBON	
	R784	QRD167J-224	220K 1/6W CARBON	
	R785	QRD167J-562	5.6K 1/6W CARBON	
	R786	QRD167J-392	3.9K 1/6W CARBON	
	R788	QRD167J-103	10K 1/6W CARBON	
	R789	QRD167J-102	1K 1/6W CARBON	
	R790	QRD167J-471	470 1/6W CARBON	
	R791	QRD167J-683	68K 1/6W CARBON	
	R792	QRD167J-183	18K 1/6W CARBON	
	R793	QRD167J-183	18K 1/6W CARBON	
	R794	QRD167J-221	220 1/6W CARBON	
	R796	QRD167J-472	4.7K 1/6W CARBON	
	R797	QRD167J-472	4.7K 1/6W CARBON	
	R798	QRD167J-472	4.7K 1/6W CARBON	
⚠	R799	QRZ0077-100	10 1/4W FUSIBLE	
⚠	R800	QRZ0077-100	10 1/4W FUSIBLE	
	R801	QRD167J-474	470K 1/6W CARBON	
	R802	QRD167J-474	470K 1/6W CARBON	
	R803	QRD167J-823	82K 1/6W CARBON	
	R804	QRD167J-221	220 1/6W CARBON	
	R805	QRD167J-683	68K 1/6W CARBON	
	R806	QRD167J-123	12K 1/6W CARBON	
	R807	QRD167J-152	1.5K 1/6W CARBON	
	R808	QRD167J-2R2	2.2 1/6W CARBON	
	R810	QRD167J-684	680K 1/6W CARBON	
	R811	QRD167J-513	51K 1/6W CARBON	
	R812	QRD167J-513	51K 1/6W CARBON	
	R813	QRD167J-683	68K 1/6W CARBON	
	R814	QRD167J-683	68K 1/6W CARBON	
	R815	QRD167J-221	220 1/6W CARBON	
	R821	QRD167J-563	56K 1/6W CARBON	
	R822	QRD167J-563	56K 1/6W CARBON	
	R823	QRD167J-394	390K 1/6W CARBON	
	R824	QRD167J-681	680 1/6W CARBON	
	R825	QVPA601-202A	2K VARIABLE	
	R826	QRD167J-122	1.2K 1/6W CARBON	
	R827	QRD167J-334	330K 1/6W CARBON	
	R828	QRD167J-512	5.1K 1/6W CARBON	
	R829	QVPA601-154A	150K VARIABLE	
	R830	QRD167J-223	22K 1/6W CARBON	
	R831	QRD167J-682	6.8K 1/6W CARBON	
	R832	QRD167J-103	10K 1/6W CARBON	
	R833	QRD167J-562	5.6K 1/6W CARBON	
	R834	QRD167J-562	5.6K 1/6W CARBON	
	R835	QRD167J-562	5.6K 1/6W CARBON	
	R836	QRD167J-562	5.6K 1/6W CARBON	
	R837	QRD167J-183	18K 1/6W CARBON	
	R839	QRD167J-103	10K 1/6W CARBON	
	R840	QRD167J-154	150K 1/6W CARBON	
	R841	QRD167J-103	10K 1/6W CARBON	
	R842	QRD167J-303	30K 1/6W CARBON	
	R843	QRD167J-434	430K 1/6W CARBON	
	R844	QRD167J-434	430K 1/6W CARBON	
	R845	QRD167J-103	10K 1/6W CARBON	
	R846	QRD167J-184	180K 1/6W CARBON	
	R847	QRD167J-104	100K 1/6W CARBON	
	R848	QRD167J-104	100K 1/6W CARBON	
	R849	QRD167J-681	680 1/6W CARBON	
	R850	QRD167J-183	18K 1/6W CARBON	
	R852	QRD167J-102	1K 1/6W CARBON	
	R853	QRD167J-562	5.6K 1/6W CARBON	
	R857	QRD167J-221	220 1/6W CARBON	
	R858	QRD167J-562	5.6K 1/6W CARBON	
	R859	QRD167J-183	18K 1/6W CARBON	
	R861	QRD167J-182	1.8K 1/6W CARBON	
	R862	QRD167J-221	220 1/6W CARBON	
	R863	QRD167J-184	180K 1/6W CARBON	
	R864	QRD167J-393	39K 1/6W CARBON	
	R865	QVPA601-104A	100K VARIABLE	
	R866	QRD167J-224	220K 1/6W CARBON	
	R867	QRD167J-182	1.8K 1/6W CARBON	
	R868	QRD167J-122	1.2K 1/6W CARBON	
	R869	QRD167J-822	8.2K 1/6W CARBON	
	R870	QRD167J-822	8.2K 1/6W CARBON	
	R871	QRD167J-821	820 1/6W CARBON	
	R872	QRD167J-182	1.8K 1/6W CARBON	
	R873	QRD167J-101	100 1/6W CARBON	
	R874	QRD167J-561	560 1/6W CARBON	
	R875	QRD167J-682	6.8K 1/6W CARBON	
	R876	QRD167J-682	6.8K 1/6W CARBON	
	R877	QRD167J-102	1K 1/6W CARBON	
	R879	QRD167J-102	1K 1/6W CARBON	
	R880	QRD167J-102	1K 1/6W CARBON	
	R881	QRD167J-103	10K 1/6W CARBON	
	R882	QRD161J-272	2.7K 1/6W CARBON	
	R883	QRD167J-102	1K 1/6W CARBON	
	R884	QRD167J-271	270 1/6W CARBON	
	R885	QRD167J-103	10K 1/6W CARBON	
	R886	QRD167J-562	5.6K 1/6W CARBON	
	R887	QRD167J-472	4.7K 1/6W CARBON	
	R888	QRD167J-822	8.2K 1/6W CARBON	
	R889	QRD167J-103	10K 1/6W CARBON	
	R891	QRD167J-561	560 1/6W CARBON	
	R892	QRD167J-561	560 1/6W CARBON	A
	R892	QRD167J-561	560 1/6W CARBON	BS
	R892	QRD167J-561	560 1/6W CARBON	EF
	R892	QRD167J-561	560 1/6W CARBON	EN
	R892	QRD167J-222	2.2K 1/6W CARBON	G
	R892	QRD167J-222	2.2K 1/6W CARBON	GI
	R892	QRD167J-561	560 1/6W CARBON	U
	R892	QRD167J-561	560 1/6W CARBON	US
	R892	QRD167J-561	560 1/6W CARBON	UT
	R893	QRD167J-561	560 1/6W CARBON	
	R894	QRD167J-561	560 1/6W CARBON	
	R895	QRD167J-472	4.7K 1/6W CARBON	
	R896	QRD167J-270	27 1/6W CARBON	A
	R896	QRD167J-270	27 1/6W CARBON	BS
	R896	QRD167J-270	27 1/6W CARBON	EF
	R896	QRD167J-270	27 1/6W CARBON	EN
	R896	QRD167J-560	56 1/6W CARBON	G
	R896	QRD167J-560	56 1/6W CARBON	GI
	R896	QRD167J-270	27 1/6W CARBON	U
	R896	QRD167J-270	27 1/6W CARBON	US
	R896	QRD167J-270	27 1/6W CARBON	UT
	R897	QRD167J-181	180 1/6W CARBON	
	R898	QRD167J-181	180 1/6W CARBON	
	R899	QRD167J-273	27K 1/6W CARBON	
	R900	QRD167J-273	27K 1/6W CARBON	
	R901	QRD167J-273	27K 1/6W CARBON	
	R902	QRD167J-273	27K 1/6W CARBON	

⚠ : SAFETY PARTS

⚠ : SAFETY PARTS

RESISTORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R903	QRD167J-562	5.6K 1/6W CARBON	
	R904	QRD167J-562	5.6K 1/6W CARBON	
	R905	QRD167J-822	8.2K 1/6W CARBON	
	R906	QRD167J-822	8.2K 1/6W CARBON	
	R907	QRD167J-273	27K 1/6W CARBON	
	R908	QRD167J-273	27K 1/6W CARBON	
	R909	QRD167J-561	560 1/6W CARBON	
	R910	QRD167J-561	560 1/6W CARBON	
	R911	QRD167J-221	220 1/6W CARBON	A
	R911	QRD167J-221	220 1/6W CARBON	BS
	R911	QRD167J-221	220 1/6W CARBON	EF
	R911	QRD167J-221	220 1/6W CARBON	EN
	R911	QRD167J-181	180 1/6W CARBON	G
	R911	QRD167J-181	180 1/6W CARBON	GI
	R911	QRD167J-221	220 1/6W CARBON	U
	R911	QRD167J-221	220 1/6W CARBON	US
	R911	QRD167J-221	220 1/6W CARBON	UT
	R912	QRD167J-221	220 1/6W CARBON	A
	R912	QRD167J-221	220 1/6W CARBON	BS
	R912	QRD167J-221	220 1/6W CARBON	EF
	R912	QRD167J-221	220 1/6W CARBON	EN
	R912	QRD167J-181	180 1/6W CARBON	G
	R912	QRD167J-181	180 1/6W CARBON	GI
	R912	QRD167J-221	220 1/6W CARBON	U
	R912	QRD167J-221	220 1/6W CARBON	US
	R912	QRD167J-221	220 1/6W CARBON	UT
	R913	QRD167J-153	15K 1/6W CARBON	
	R914	QRD167J-153	15K 1/6W CARBON	
	R925	QRD167J-102	1K 1/6W CARBON	U
	R925	QRD167J-102	1K 1/6W CARBON	US
	R925	QRD167J-102	1K 1/6W CARBON	UT
	R926	QRD167J-102	1K 1/6W CARBON	U
	R926	QRD167J-102	1K 1/6W CARBON	US
	R926	QRD167J-102	1K 1/6W CARBON	UT
	R927	QRD167J-102	1K 1/6W CARBON	U
	R927	QRD167J-102	1K 1/6W CARBON	US
	R927	QRD167J-102	1K 1/6W CARBON	UT
	R941	QRD167J-152	1.5K 1/6W CARBON	
	R942	QRD167J-512	5.1K 1/6W CARBON	
	R943	QRD167J-201	200 1/6W CARBON	
	R945	QRD167J-104	100K 1/6W CARBON	
	R946	QRD167J-104	100K 1/6W CARBON	
	R947	QRD167J-392	3.9K 1/6W CARBON	
	R948	QRD167J-392	3.9K 1/6W CARBON	
	R949	QRD167J-684	680K 1/6W CARBON	
	R950	QRD167J-154	150K 1/6W CARBON	
	R951	QRD167J-200	20 1/6W CARBON	
	R953	QRD167J-200	20 1/6W CARBON	
	R954	QRD121J-120	12 1/2W CARBON	
	R961	QRD167J-680	68 1/6W CARBON	U
	R961	QRD167J-680	68 1/6W CARBON	US
	R961	QRD167J-680	68 1/6W CARBON	UT
	R962	QRD167J-680	68 1/6W CARBON	U
	R962	QRD167J-680	68 1/6W CARBON	US
	R962	QRD167J-680	68 1/6W CARBON	UT
	R963	QRD167J-680	68 1/6W CARBON	U
	R963	QRD167J-680	68 1/6W CARBON	US
	R963	QRD167J-680	68 1/6W CARBON	UT
	R964	QRD167J-680	68 1/6W CARBON	U
	R964	QRD167J-680	68 1/6W CARBON	US
	R964	QRD167J-680	68 1/6W CARBON	UT
	R965	QRD167J-680	68 1/6W CARBON	U
	R965	QRD167J-680	68 1/6W CARBON	US
	R965	QRD167J-680	68 1/6W CARBON	UT
	R966	QRD167J-680	68 1/6W CARBON	U
	R966	QRD167J-680	68 1/6W CARBON	US
	R966	QRD167J-680	68 1/6W CARBON	UT
	R967	QRD167J-103	10K 1/6W CARBON	
	R971	QRD167J-220	22 1/6W CARBON	
	R972	QRD167J-220	22 1/6W CARBON	
	R973	QRD167J-102	1K 1/6W CARBON	
	R974	QRD167J-105	1M 1/6W CARBON	
	R975	QRD167J-331	330 1/6W CARBON	
	R976	QRD167J-183	18K 1/6W CARBON	
	R977	QRD167J-102	1K 1/6W CARBON	
	R978	QRD167J-103	10K 1/6W CARBON	
	R979	QRD167J-103	10K 1/6W CARBON	
	R980	QRD167J-104	100K 1/6W CARBON	
	R981	QRD167J-222	2.2K 1/6W CARBON	
	R982	QRD167J-910	91 1/6W CARBON	
	R991	QRD167J-471	470 1/6W CARBON	
	R992	QRD167J-473	47K 1/6W CARBON	
	R994	QRD167J-103	10K 1/6W CARBON	
	R995	QRD167J-472	4.7K 1/6W CARBON	
	R996	QRD167J-105	1M 1/6W CARBON	
	R997	QRD167J-473	47K 1/6W CARBON	
	R999	QRD167J-472	4.7K 1/6W CARBON	
	RA991	QRB045J-473M	47K 1/8W R.NETWORK	

⚠ : SAFETY PARTS

OTHERS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		E3400-420	FELT SPACER	
		E308198-001	FL. HOLDER	
	J701	EMV7141-013M	CONNECTOR(13PIN)	
	K801	ENZ8101-007	FERRITE BEAS	G
	K801	ENZ8101-007	FERRITE BEAS	GI
	P801	EMV7144-015	CONNECTOR(15PIN)	
	P802	EMV5109-006A	PLUG ASSY(6PIN)	
	P803	EMV5109-005A	PLUG ASSY(5PIN)	
	P901	EMV7123-025	CONNECTOR(25PIN)	
	P961	EMV7127-007	CONNECTOR(7PIN)	U
	P961	EMV7127-007	CONNECTOR(7PIN)	US
	P961	EMV7127-007	CONNECTOR(7PIN)	UT
	P981	GP1F32T	OPTICAL JACK	
	P991	EMV7123-025R	CONNECTOR(25PIN)	
	S971	ESP0001-018	TACT SWITCH(1)	
	S972	ESP0001-018	TACT SWITCH(3)	
	S973	ESP0001-018	TACT SWITCH(7)	
	S974	ESP0001-018	TACT SWITCH(9)	
	S975	ESP0001-018	TACT SWITCH(4)	
	S976	ESP0001-018	TACT SWITCH(2)	
	S977	ESP0001-018	TACT SWITCH(5)	
	S978	ESP0001-018	TACT SWITCH(10)	
	S979	ESP0001-018	TACT SWITCH(6)	
	S980	ESP0001-018	TACT SWITCH(8)	
	S981	ESP0001-018	TACT SWITCH(PROGRAM)	
	S982	ESP0001-018	TACT SWITCH(⏭)	
	S983	ESP0001-018	TACT SWITCH(EDIT MODE)	
	S984	ESP0001-018	TACT SWITCH(⏮)	
	S985	ESP0001-018	TACT SWITCH(SIDE A/B)	
	S986	ESP0001-018	TACT SWITCH(TIME)	
	S987	ESP0001-018	TACT SWITCH(FADE MODE)	
	S988	ESP0001-018	TACT SWITCH(REPEAT ALL/1)	
	S989	ESP0001-018	TACT SWITCH(RANDOM)	
	S990	ESP0001-018	TACT SWITCH(DISPLAY)	
	S991	ESP0001-018	TACT SWITCH(+10)	
	S992	ESP0001-018	TACT SWITCH(PLAY/PAUSE)	
	S993	ESP0001-018	TACT SWITCH(OPEN/CLOSE)	
	S994	ESP0001-018	TACT SWITCH(CANCEL)	
	S995	ESP0001-018	TACT SWITCH(STOP/CLEAR)	
	X841	ECX0169-344EA	RESONATOR	
	CF991	ECX0004-194KM	RESONATOR	
⚠	CP701	ICP-N5	I.C. PROTECTOR	
	EP701	E70859-001	EARTH PLATE	
	EP702	E70859-001	EARTH PLATE	
	EP703	E70859-001	EARTH PLATE	
	EP704	E70859-001	EARTH PLATE	
	FL991	ELU0001-140	FL TUBE	

⚠ : SAFETY PARTS

JVC
VICTOR COMPANY OF JAPAN, LIMITED
AUDIO DIVISION. 1644.SHIMOTSURUMA.YAMATO-SHI,KANAGAWA-KEN,242,JAPAN

Printed in Japar
9306 (V)

JVC-00977

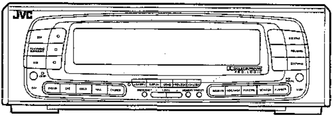
JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

CA-MXG9BK/XT-MXG9BK

(Unit No. SE-MXG9BK)



Note 1. This manual is for one part of the titled model consisting of the plural units as detailed.

Unit No. Consisted	Part of Model	Manual No.
RX-MXG9BK	TUNER-AMPLIFIER	20434
SE-MXG9BK	S.E.A. GRAPHIC EQUALIZER	20435
XL-MXG9BK	COMPACT DISC PLAYER	20436
TD-MXG9BK	CASSETTE DECK	20437

2. RX-MXG9BK is needed for the power supply when servicing the unit not provided with the power (mains) cord.

3. For instruction manual, packing materials and accessories, please refer to the manual of *RX-MXG9BK.*

Contents

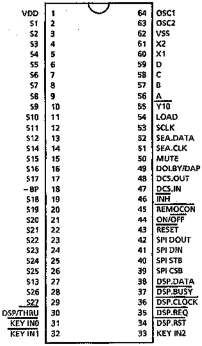
Description of Major LSIs *1-2*
Internal Connection of FL Display Tube .. *1-12*
Disassembly Procedures *1-13*
Block Diagrams *1-14*
Schematic Diagrams .... *Insertion*
Printed Circuit Boards .... *Insertion*
Parts List .... *Separate-volume Insertion*

No. 20435
Jun. 1993

Description of ICs

■ MN171X02JHK (IC301) : System controller

1. Terminal Layout


VDD 1
S1 2
S2 3
S3 4
S4 5
S5 6
S6 7
S7 8
S8 9
S9 10
S10 11
S11 12
S12 13
S14 14
S15 15
S16 16
S17 17
−BP 18
S18 19
S19 20
S20 21
S21 22
S22 23
S23 24
S24 25
S25 26
S13 27
S26 28
S27 29
DSP/THRU 30
KEY IN0 31
KEY IN1 32
64 OSC1
63 OSC2
62 VSS
61 X2
60 X1
59 D
58 C
57 B
56 A
55 Y10
54 LOAD
53 SCLK
52 SEA.DATA
51 SEA.CLK
50 MUTE
49 DOLBY/DAP
48 DCS.OUT
47 DCS.IN
46 INH
45 REMOCON
44 ON/OFF
43 RESET
42 SPI DOUT
41 SPI DIN
40 SPI STB
39 SPI CSB
38 DSP.DATA
37 DSP.BUSY
36 DSP.CLOCK
35 DSP.REQ
34 DSP.RST
33 KEY IN2

2. Key matrix

	KEY IN0	KEY IN1	KEY IN2
Y0	–	4Ch / SEP.C	–
Y1	CSRP	DISPLAY	DSEP
Y2	SEA ON/OFF	DEMO	SOOTHING
Y3	FRONT DAP ON/OFF	PRO LOGIC	RELAXING
Y4	DSP ON/OFF	3Ch LOGIC	EXCITING
Y5	CHURCH	FREQUENCY	SOUEEZE
Y6	HALL	LEVEL –	VOC. MASK
Y7	DOME	LEVEL +	KEY CTRL
Y8	LIVE	MEMORY	SCRATCH
Y9	D. CLUB	PRESET	FLANGER

3. Decoder output of IC302

	$\overline{Y0}$	$\overline{Y1}$	$\overline{Y2}$	$\overline{Y3}$	$\overline{Y4}$	$\overline{Y5}$	$\overline{Y6}$	$\overline{Y7}$	$\overline{Y8}$	$\overline{Y9}$
DATA A (56PIN)	L	H	L	H	L	H	L	H	L	H
DATA B (57PIN)	L	L	H	H	L	L	H	H	L	L
DATA C (58PIN)	L	L	L	L	H	H	H	H	L	L
DATA D (59PIN)	L	L	L	L	L	L	L	L	H	H

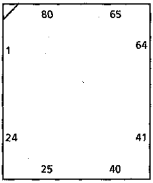
$\overline{Y0}$~$\overline{Y9}$ are the outputs of the shift register IC302.

4. Pin Functions

Pin No.	Symbol	I/O	Functions	Pin No.	Symbol	I/O	Functions
1	VDD	–	Power supply	44	ON/OFF	I	H : power on
2~17	S1~S17	O	Segment control	45	REMOCON	I	Remote control signal input
18		–	Power supply for FL display	46	INH	I	Inhibit signal input
19~29	S18~S27	O	Segment control	47,48	DCS.IN/OUT	I/O	Compulink signal
30	DSP/THRU		L : Pass the DSP circuit.	49	DOLBY/DAP	O	L : DAP
31~33	KEY IN0~2	I	Key matrix input	50	MUTE	O	H : Source direct on
34	DSP.RST	O	Reset signal for DSP μ-com	51	SEA.CLK	O	Clock signal for data transmission to IC251
35	DSP.REQ	O	Request signal for DSP μ-com	52	SEA.DATA	O	Data for IC104
36	DSP.CLOCK	O	Clock for data transmission to μ-com	53	SCLK	O	Clock for FL driver
37	DSP.BUSY	O	Data for sea	54	LOAD	O	Latch clock output of FL display data
38	DSP.DATA	O	DSP data signal output	55	Y10	O	FL grid output
39	SPI CSB	O	Chip select signal to IC251	56~59	A~D	O	Grid control/Key matrix output
40	SPI STB	O	Strobe signal for data transmission to IC251	60	X1	--	Connected to GND
41	SPI DIN	I	SPI data from IC251	61	X2	--	Non connection
42	SPI DOUT	O	Control data for IC251	62	VSS	–	GND
43	RESET	I	Reset signal	63,64	OSC2,1	--	Oscillation terminal

■ MN170801JPU (IC611) : DSP CONTROL μ-COM

1. Terminal Layput

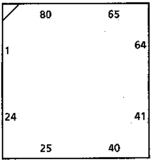


2. Pin Functions

Pin No.	Symbol	I/O	Functions	Pin No.	Symbol	I/O	Functions
1	P13	I	DSP data input from IC301 (DATA)	33	PA0	O	ROM address output
2	P20	I	DSP request input (REQ)	34	PA1	O	ROM address output
3	P21	–	Connect to 2pin	35	PA2	O	ROM address output
4	P22	I	Inhibit input	36	PA3	O	ROM address output
5	P23	–	Connect to 4pin	37	PB0	O	ROM address output
6	P30	–	Connect to +5V	38	PB1	O	ROM address output
7	P31	–	Connect to +5V	39	PB2	O	ROM address output
8	P32	–	Connect to +5V	40	PB3	–	Not used
9	P40	O	Reset signal for ADC	41	PC0	–	Not used
10	P41	–	Not used	42	PC1	–	Not used
11	P42	–	Not used	43	PC2	–	Not used
12	P43	–	Not used	44	PC3	–	Not used
13	P50	–	Not used	45	PD0	O	Reset signal for DSP IC (RES)
14	P51	–	Not used	46	PD1	O	Ready signal for DSP IC (SRDY)
15	P52	–	Not used	47	PD2	O	Request signal DSP IC (SIRQ)
16	P53	O	ROM chip select signal output (CE)	48	PD3	–	Not used
17	P60	I	ROM data input	49	PE0	O	DSP OFF : H (D.MUTE)
18	P61	I	ROM data input	50	PE1	O	Reset signal for DAC (DARST)
19	P62	I	ROM data input	51	RST	I	Reset signal input
20	P63	I	ROM data input	52	X1	–	Connect to +5V
21	P70	I	ROM data input	53	X2	–	Not used
22	P71	I	ROM data input	54	VDD	–	+5V
23	P72	I	ROM data input	55	OSC2	–	Oscillation terminal
24	P73	I	ROM data input	56	OSC1	–	Oscillation terminal
25	P80	O	ROM address output	57	VSS	–	GND
26	P81	O	ROM address output	58	P00	O	Strobe for IC201 (STB)
27	P82	O	ROM address output	59	P01	O	Serial data for IC605, 201 (SICK)
28	P83	O	ROM address output	60	P02	I	Ready signal input which indicates that the serial input is on the execution (SIAK)
29	P90	O	ROM address output	61	P03	O	Serial data for IC605, 201 (SI)
30	P91	O	ROM address output	62	P10	O	It is high while processing data (BUSY)
31	P92	O	ROM address output	63	P11	I	Clock input (CLK)
32	P93	O	ROM address output	64	P12	I	DSP data input from IC301 (DATA)

■ LC83016E (IC605) : DSP (Digital Signal Processor)

1. Terminal Layout

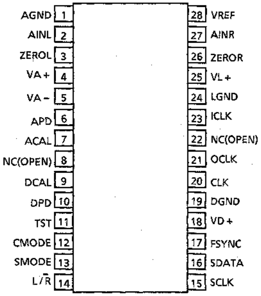


2. Pin Functions

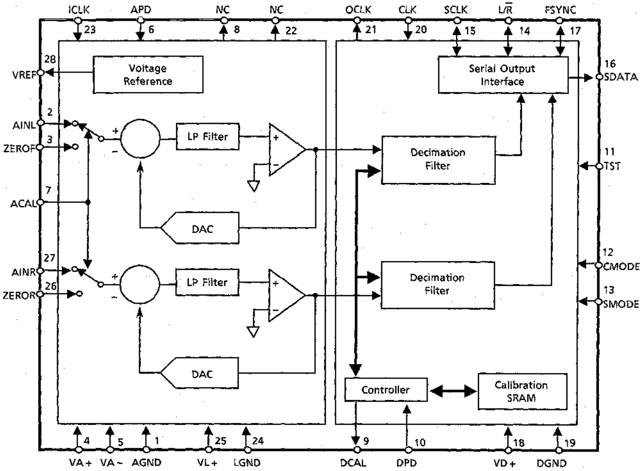
Pin No.	Symbol	I/O	Functions
1~6	P0~P5	--	Not used
7	ASI1	I	Audio data serial 1 input terminal
8	BCK1	I	Bit clock for ASI 1 input
9	FS3841	--	Not used
10	LRCKI	I	L/R channel selectable signal input. (L : R-ch , H : L-ch)
11	ASI2	--	Connected to GND
12	BCK2	I	Bit clock for ASI 2 input
13, 51, 77	VDD1,2,3	--	Power supply (+5V)
14~17,19	TEST1~5	--	Connected to GND
18, 33, 54, 74	VSS1,2,3,4	--	Connected to GND
20	$\overline{\text{RAS}}$	O	ROW ADDRESS STROBE : Signal output when accessing external D-RAM
21	$\overline{\text{CAS}}$	O	COLUMN ADDRESS STROBE : Signal output when accessing external D-RAM
22	$\overline{\text{DWRT}}$	O	Data write signal output when accessing external D-RAM
23	$\overline{\text{DREAD}}$	O	Data read signal output when accessing external D-RAM
24	$\overline{\text{CE}}$/CS	--	Not used
32~25	D0~D7	I/O	Data input / output between external D-RAM and these pins
34~41	A0~A7	O	Address output for external D-RAM
42~50	A8~A16	–	Not used
52	OSC1	I	External clock input. (384fs)
53	OSC2	O	External clock output
55	FS384O	O	384fs or 512fs output
56	FS192O	O	192fs or 256fs output
57,58	FS128O,FS64O	--	Not used
59	FS32O	O	32fs or 16fs output
60	LRCKO	O	L/R channel selectable signal output. (L : R-ch , H : L-ch)
61,62	AOWCK,ASO	--	Not used
63	AOTDF1	O	Audio data serial 1 output terminal
64	AOTDF2	O	Audio data serial 2 output terminal
65	SI	I	Serial clock input for SI input
66	SICK	I	Serial data input from control micro computer
67	$\overline{\text{SIRQ}}$	I	Request signal input for serial input
68	$\overline{\text{SIAK}}$	O	Signal output which indicates that the serial input is on the execution
69	$\overline{\text{SRDY}}$	I	Ready signal input which indicates that the serial data input from control micro computer is an end
70,71,72	SO,SOCK,$\overline{\text{SORQ}}$,$\overline{\text{SOAK}}$	--	Not used
75	$\overline{\text{RES}}$	I	Reset input
76	$\overline{\text{INT}}$	I	Interrupt request signal input
78,79,80	SELC,SACK1,SACK2	--	Connected to GND

■ CS5339-KS (IC604) : Analog to Digital Converter

1. Terminal layout

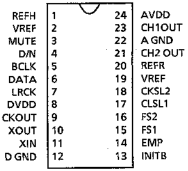

AGND 1
AINL 2
ZEROL 3
VA+ 4
VA- 5
APD 6
ACAL 7
NC(OPEN) 8
DCAL 9
DPD 10
TST 11
CMODE 12
SMODE 13
L/R̄ 14
15 SCLK
16 SDATA
17 FSYNC
18 VD+
19 DGND
20 CLK
21 OCLK
22 NC(OPEN)
23 ICLK
24 LGND
25 VL+
26 ZEROR
27 AINR
28 VREF

2. Block diagram

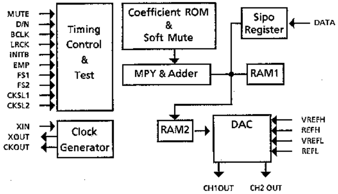

ICLK 23
APD 6
NC 8
NC 22
OCLK 21
CLK 20
SCLK 15
L/R̄ 14
FSYNC 17
28 VREF
Voltage Reference
2 AINL
3 ZEROF
7 ACAL
27 AINR
26 ZEROR
+
-
LP Filter
DAC
LP Filter
DAC
Serial Output Interface
16 SDATA
Decimation Filter
11 TST
Decimation Filter
12 CMODE
13 SMODE
Controller
Calibration SRAM
4 VA+
5 VA-
1 AGND
25 VL+
24 LGND
9 DCAL
10 DPD
18 VD+
19 DGND

■ LC78835MX (IC608,609) : 8-Times Oversampling · 18-Bit D/A Converter

1. Terminal Layout


REFH 1
VREF 2
MUTE 3
D/N 4
BCLK 5
DATA 6
LRCK 7
DVDD 8
CKOUT 9
XOUT 10
XIN 11
D GND 12
24 AVDD
23 CH1OUT
22 A GND
21 CH2 OUT
20 REFR
19 VREF
18 CKSL2
17 CLSL1
16 FS2
15 FS1
14 EMP
13 INITB

2. Block Diaglam


MUTE
D/N
BCLK
LRCK
INITB
EMP
FS1
FS2
CKSL1
CKSL2
Timing Control & Test
XIN
XOUT
CKOUT
Clock Generator
Coefficient ROM & Soft Mute
MPY & Adder
Sipo Register
DATA
RAM1
RAM2
DAC
VREFH
REFH
VREFL
REFL
CH1OUT
CH2 OUT

3. Pin Functions

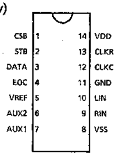
Pin No.	Symbol	I/O	Functions
1	REFH	I	Reference voltage terminal
2	VREFH	I	Reference voltage terminal
3	MUTE	I	Mute sigmal input
4	D/N	--	Connected to ground
5	BCLK	I	Bit clock input
6	DATA	I	Digital audio data input
7	LRCK	I	LR clock input (H : CH1, L : CH2)
8	DVDD	--	Power supply for the digital section
9	CKOUT	--	Connected to ground
10	XOUT	--	Connected to ground
11	XIN	I	Oscillation terminal
12	DGND	--	Digital ground
13	INITB	I	Internal circuit is initialized by this signal
14	EMP	--	Connected to ground
15	FS1	--	Connected to ground
16	FS2	--	Connected to +5V
17, 18	CKSL1, CKSL2	--	Connected to +5V
19	VREFL	--	Connected to ground
20	REFL	I	Reference voltage terminal
21	CH2 OUT	O	Analog output terminal
22	AGND	--	Analog ground
23	CH1 OUT	O	Analog output terminal
24	AVDD	--	Power supply for the Analog section

XR1097CP (IC251) : 7-Channel Graphic Equalizer Filter With A/D Converter

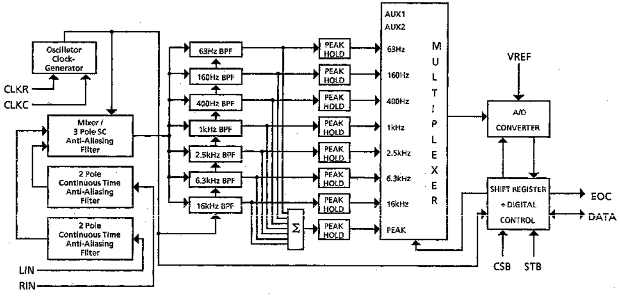
1. The main function descriptions

(1) Internal R/C Oscillator
(2) Provides seven fillters in one 14-pin package
(3) Dual inputs for summing Left and Right Channels
(4) Provides 30dB of Gain
(5) Two auxilialy inputs
(6) Microprocessor Bus interface
(7) On Chip A/D Converter

2. Terminal Layout
(Top View)


CSB 1
STB 2
DATA 3
EOC 4
VREF 5
AUX2 6
AUX1 7
14 VDD
13 CLKR
12 CLKC
11 GND
10 LIN
9 RIN
8 VSS

3. Block Diagram

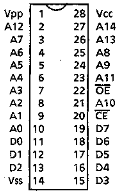

Oscillator Clock-Generator
CLKR
CLKC
Mixer / 3 Pole SC Anti-Aliasing Filter
2 Pole Continuous Time Anti-Aliasing Filter
2 Pole Continuous Time Anti-Aliasing Filter
LIN
RIN
63Hz BPF
160Hz BPF
400Hz BPF
1kHz BPF
2.5kHz BPF
6.3kHz BPF
16kHz BPF
Σ
PEAK HOLD
AUX1
AUX2
63Hz
160Hz
400Hz
1kHz
2.5kHz
6.3kHz
16kHz
PEAK
MULTIPLEXER
VREF
A/D CONVERTER
SHIFT REGISTER + DIGITAL CONTROL
EOC
DATA
CSB
STB

4. Pin Functions

Pin No.	Symbol	I/O	Functions
1	CSB	I	Chip select pin
2	STB	I	Clock pin to shift in/out data through the serial port.
3	DATA	I	Serial port for digital signals to and from microprocessor.
4	EOC	O	End of conversion pin.
5	VREF	I	A/D Converter reference voltage input.
6	AUX2	I	Auxiliary input 2.
7	AUX1	I	Auxiliary input 1.
8	VSS	–	Negative supply voltage. (–5.7V)
9	RIN	I	Right channel input.
10	LIN	I	Left channel input.
11	GND	–	Ground
12	CLKC	I	Clock capasitor from this pin to GND.
13	CLKR	I	Clock resistor from this pin to CLKC.
14	VDD	–	Positive supply voltage. (+5.6V)

■ LH5359MK (IC610) : ROM

1. Terminal Layout

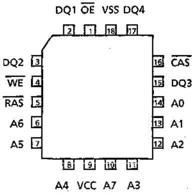

Vpp 1 28 Vcc
A12 2 27 A14
A7 3 26 A13
A6 4 25 A8
A5 5 24 A9
A4 6 23 A11
A3 7 22 $\overline{OE}$
A2 8 21 A10
A1 9 20 $\overline{CE}$
A0 10 19 D7
D0 11 18 D6
D1 12 17 D5
D2 13 16 D4
Vss 14 15 D3

2. Pin Functions

Symbol	Functions
A0~A14	Address inputs
O0~O7	Data outputs
$\overline{CE}$	Chip enable
$\overline{OE}$	Output enable
Vpp	Program power supply
Vcc	Power supply (+5V)
GND	GND (0V)

■ MN41464AJ-08W (IC606,607) : RAM

1. Terminal Layout

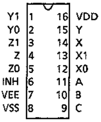

DQ1 $\overline{OE}$ VSS DQ4
2 1 18 17
DQ2 3
$\overline{WE}$ 4
$\overline{RAS}$ 5
A6 6
A5 7
16 $\overline{CAS}$
15 DQ3
14 A0
13 A1
12 A2
8 9 10 11
A4 VCC A7 A3

2. Pin Functions

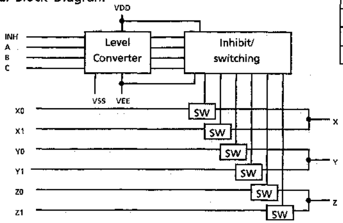
Symbol	Functions
A0~A7	Address inputs
$\overline{RAS}$	Row Address Strobe
$\overline{CAS}$	Column Address Strobe
$\overline{WE}$	Write enable
$\overline{OE}$	Output enable
DQ 1~DQ 4	Data input/output
Vcc	Power supply (+5V)
Vss	GND (0V)

■ μPD4053BC (IC111) : 2CH -Multiplexer

1. Terminal Layout


Y1 1 16 VDD
Y0 2 15 Y
Z1 3 14 X
Z 4 13 X1
Z0 5 12 X0
INH 6 11 A
VEE 7 10 B
VSS 8 9 C

2. Block Diagram

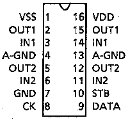

VDD
INH
A
B
C
Level Converter
Inhibit/ switching
VSS
VEE
X0
X1
Y0
Y1
Z0
Z1
SW
SW
SW
SW
SW
SW
X
Y
Z

3. Function Table

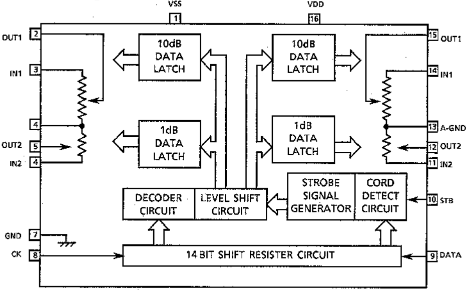
Control input				ON channel
INH	C	B	A	
L	L	L	L	Z0, Y0, X0
L	L	L	H	Z0, Y0, X1
L	L	H	L	Z0, Y1, X0
L	L	H	H	Z0, Y1, X1
L	H	L	L	Z1, Y0, X0
L	H	L	H	Z1, Y0, X1
L	H	H	L	Z1, Y1, X0
L	H	H	H	Z1, Y1, X1
H	×	×	×	NONE

TC9213P (IC201) : Volume Controller

1. Terminal Layout

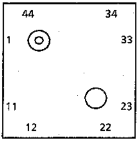

VSS 1
OUT1 2
IN1 3
A-GND 4
OUT2 5
IN2 6
GND 7
CK 8
16 VDD
15 OUT1
14 IN1
13 A-GND
12 OUT2
11 IN2
10 STB
9 DATA

2. Block Diagram


VSS
VDD
1
16
OUT1 2
IN1 3
4
OUT2 5
IN2 4
GND 7
CK 8
15 OUT1
14 IN1
13 A-GND
12 OUT2
11 IN2
10 STB
9 DATA
10dB DATA LATCH
10dB DATA LATCH
1dB DATA LATCH
1dB DATA LATCH
DECODER CIRCUIT
LEVEL SHIFT CIRCUIT
STROBE SIGNAL GENERATOR
CORD DETECT CIRCUIT
14 BIT SHIFT RESISTER CIRCUIT

MSC7112-01GS-V1K (IC305) : Flourescent Dispaly Driver

1. Terminal Layout

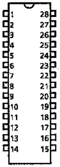

44
34
1
33
11
23
12
22

2. Pin Functions

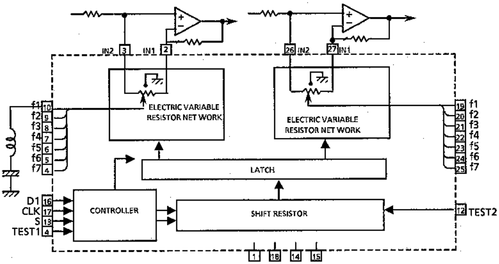
Pin No.	Pin Name	I/O	Functions
33~38,40~44,1	D1~D12	O	FL display tube drive signal.
2	AI	O	LED output
3	F.DSP	O	LED output
4	SEA	O	LED output
5	DSP	O	LED output
6	4ch DSP	O	LED output
7	VSS	–	GND
8,17,39	VEE	–	Power supply for the FL driver circuit (-30V)
9~16, 18~25	SEG A~O	O	FL display tube drive signal
26	SCLK	I	Clock signal to the shift register
27	DATA IN	I	Displa data to the sshift register
28	LOAD	I	Clock signal for the display data
29 30	OSC I OSC O	I O	Input to the oscillator circuit. Oscillator circuit is made up by connecting an external capacitor and resistor
31	POR	I	Reset signal input to the internal logic circuit when turning on
32	VDD	–	Power supply

■ LC7522 (IC141) : Variable Resistor for SEA Control

1. Terminal Layout


1
2
3
4
5
6
7
8
9
10
11
12
13
14
28
27
26
25
24
23
22
21
20
19
18
17
16
15

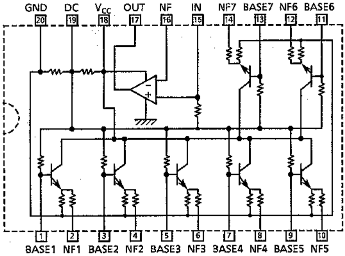
2. Block Diagram


IN2 3
IN1 2
26 IN2
27 IN1
ELECTRIC VARIABLE RESISTOR NET WORK
ELECTRIC VARIABLE RESISTOR NET WORK
f1 10
f2 9
f3 8
f4 7
f5 6
f6 5
f7 4
19 f1
20 f2
21 f3
22 f4
23 f5
24 f6
25 f7
LATCH
D1 16
CLK 17
S 13
TEST1 4
CONTROLLER
SHIFT RESISTOR
12 TEST2
1
18
14
15

3. Pin Funtions

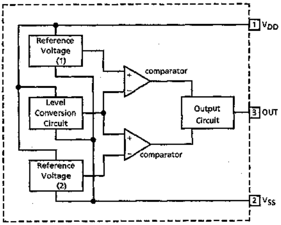
Pin No.	Symbol	Functions
1 18 14 15	V_{DD} VSS VEE VCC	Power supply +7V for audio signal Ground . Power supply −7V for audio signal. Power supply +5V
2,27 3, 26	IN 1 IN 2	Audio signal input The inversion signal of the operational amplifier inputs to IN 1 normally. The non-inversion signal of the operational amplifier inputs to IN 2 normally.
16	SDA	Data input from the CPU. Schmitt inverter type
17	SCK	Clock signal input from the CPU. Schmitt inverter type
4~10 19~25	f1~f7	For connecting to band-pass filter. f1~f7x2 (Left and Right)
11 12	TEST 1 TEST 2	Not used Not used
13	S	Chip Select
28	NC	Not used

■ LA3607S (IC151,152) : S.E.A. Graphic Equalizer It makes inductive characteristic instead of coil.


GND 20
DC 19
V_{CC} 18
OUT 17
NF 16
IN 15
NF7 14
BASE7 13
NF6 12
BASE6 11
1 BASE1
2 NF1
3 BASE2
4 NF2
5 BASE3
6 NF3
7 BASE4
8 NF4
9 BASE5
10 NF5

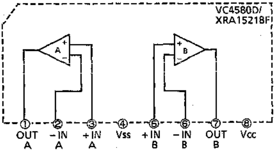
■ MN1281 (P.Q). : IC341 (Reset IC)

Block Diagram

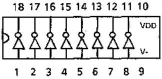

1 VDD
Reference Voltage (1)
comparator
Level Conversion Circuit
Output Circuit
3 OUT
comparator
Reference Voltage (2)
2 VSS

Pin No.	Symbol	Functions
1	V_{DD}	Power supply
2	V_{SS}	Ground
3	OUT	Reset signal output : Low level is output when resetting : High level is output when cancelling the reset.

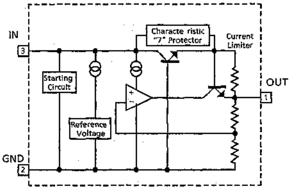
■ VC4580D / XRA15218F (IC101,121,191,202,221,601,602,603) : Dual OP Amp.


VC4580D/
XRA15218F
A
B
① OUT A
② −IN A
③ +IN A
④ Vss
⑤ +IN B
⑥ −IN B
⑦ OUT B
⑧ Vcc

■ AN6873S (IC303,304) : Inverter for FL drive


18 17 16 15 14 13 12 11 10
VDD
V-
1 2 3 4 5 6 7 8 9

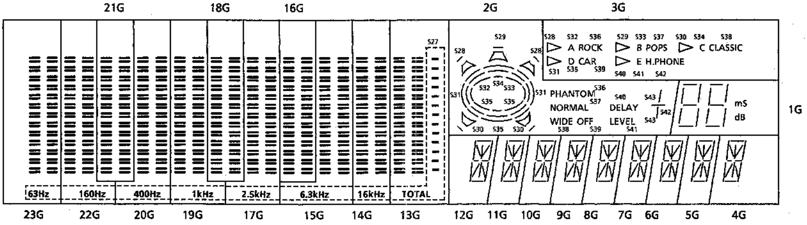
■ NJM78M05FD / NJM78L05UA (IC281,651,652,653) : Regulator

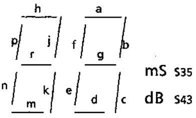

IN
3
Characte ristic "7" Protector
Current Limiter
Starting Circuit
Reference Voltage
OUT
1
GND
2

Internal Wiring of FL Display

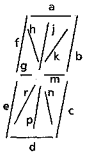
■ ELU-0001-141 (FL901)

Terminal Layout

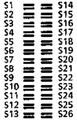

21G
18G
16G
2G
3G
1G
S27
S28
S29
S30
S31
S32
S33
S34
S35
S28 S32 S36 A ROCK
S29 S33 S37 B POPS
S30 S34 S38 C CLASSIC
D CAR S31 S35 S39
E H.PHONE S40 S41 S42
PHANTOM S36
NORMAL S37
WIDE OFF S38
S40 DELAY
LEVEL S41
S39
S43
S42
mS
dB
63Hz
160Hz
400Hz
1kHz
2.5kHz
6.3kHz
16kHz
TOTAL
23G
22G
20G
19G
17G
15G
14G
13G
12G
11G
10G
9G
8G
7G
6G
5G
4G


h
a
p
j
r
f
g
b
n
k
m
e
d
c
mS S35
dB S43

(1G)


a
f
h
j
k
b
g
m
e
r
n
p
c
d

(4G~12G)


S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
S17
S18
S19
S20
S21
S22
S23
S24
S25
S26

(13G~23G)

Pin Connection

	S28	S29	S30	S31	S32	S33	S34	S35
12G~4G	a	b	c	d	e	f	g	h
1G	a	b	c	d	e	f	g	mS
	S36	S37	S38	S39	S40	S41	S42	S43
12G~4G	j	k	m	n	p	r	–	–
1G	h	j	k	m	n	p	r	dB

Pin Connection

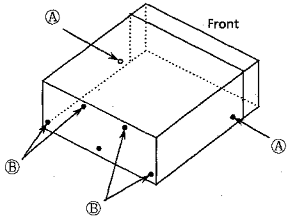
Terminal No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Electrede	F1	F1	F1	NP	NP	23G	22G	21G	20G	19G	18G	17G	16G	15G	14G	13G	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14
Terminal No.	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
Electrede	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26	P27	NP	NP	12G	11G	10G	IC	IC	IC	9G	8G	7G	6G	5G	4G	3G	2G	1G	P28
Terminal No.	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82											
Electrede	P29	P30	P31	P32	P33	P34	P35	P36	P37	P38	P39	P40	P41	P42	P43	NP	NP	F2	F2	F2											

F : Filament G : Grid P : Anode NP : No Pin IC : Internally Connected Pin

Disassembly Procedures

■ Removing the metal cover

1. Remove the 2 screws Ⓐ fastening the both sides of the metal cover and 4 screws Ⓑ fixing the back of the cover to remove the cover.



■ Removing the front panel assembly

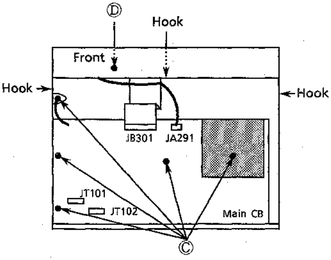
1. Remove the metal cover.
2. Remove the screw Ⓓ and release the 3 hooks to remove the assembly.
   (If necessary, disconnect the connectors.)

■ Removing the DSP circuit board

1. Removing the 3 fasteners to remove the circuit board. (If necessary, disconnect the connector.)

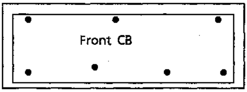
■ Removing the main circuit board

1. Disconnect the connectors JT101, JT102, JA291 and JB301.
2. Remove the 5 screws Ⓒ to remove the circuit board.



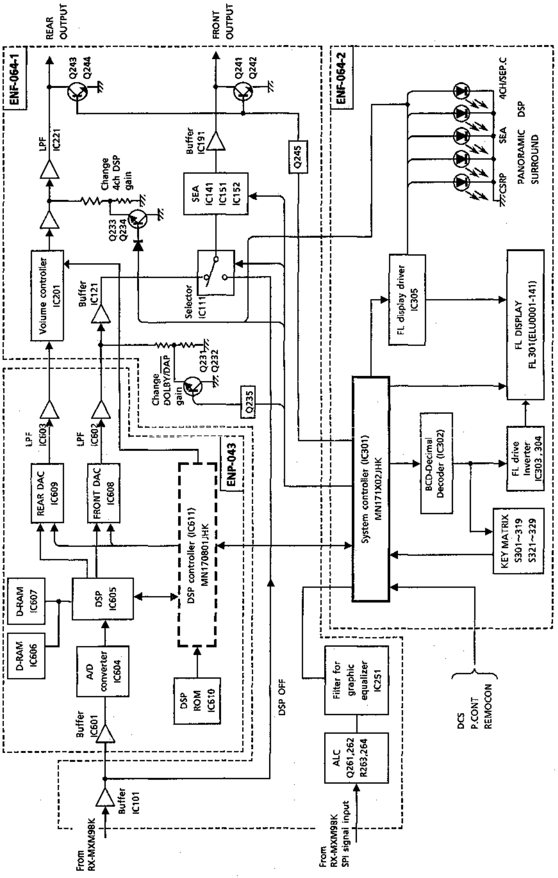
■ Removing the front circuit board

1. Remove the front panel assembly.
2. Remove the 7 screws fixng the circuit board to remove the circuit board.



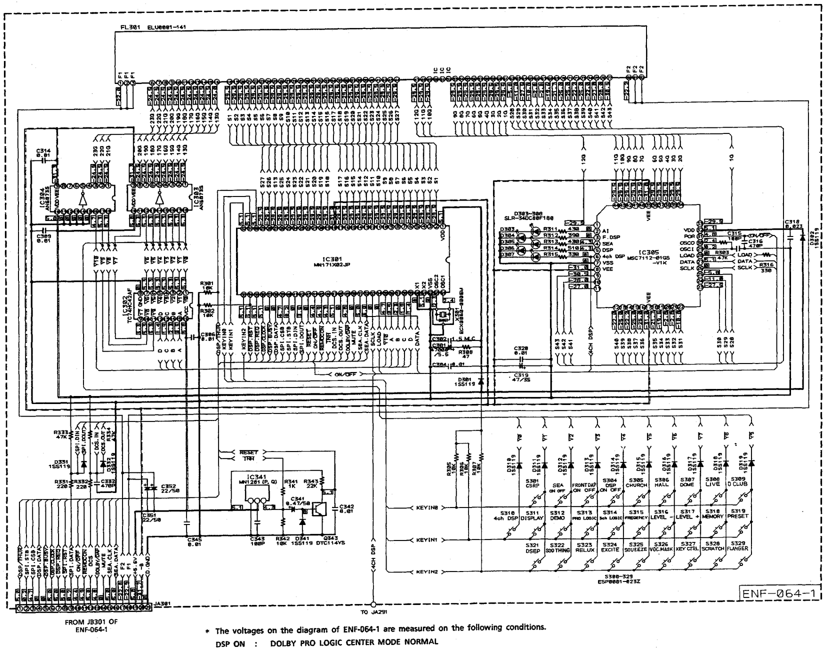
Front panel assembly

Block Diagram


REAR OUTPUT
FRONT OUTPUT
ENF-064-1
ENF-064-2
ENP-043
Q243
Q244
Q241
Q242
Q245
LPF
IC221
Buffer
IC191
Change 4ch DSP gain
Q233
Q234
SEA
IC141
IC151
IC152
Volume controller
IC201
Buffer
IC121
Selector
IC111
Change DOLBY/DAP gain
Q231
Q232
Q235
LPF
IC603
LPF
IC602
REAR DAC
IC609
FRONT DAC
IC608
DSP controller (IC611)
MN170801JHK
D-RAM
IC607
D-RAM
IC606
DSP
IC605
A/D converter
IC604
DSP ROM
IC610
DSP OFF
Buffer
IC601
Buffer
IC101
From RX-MXM9BK
4CH/SEP.C
DSP
SEA
CSRP
PANORAMIC SURROUND
FL display driver
IC305
FL DISPLAY
FL 301(ELU0001-141)
System controller (IC301)
MN171X02JHK
BCD-Decimal Decoder (IC302)
FL drive Inverter
IC303 ,304
KEY MATRIX
S301~319
S321~329
Filter for graphic equalizer
IC251
ALC
Q261,262
R263,264
DCS
P.CONT
REMOCON
From RX-MXM9BK SPI signal input

Schematic Diagrams

(1) Front Section


A B C D E F G H I J K L M N O P Q R S T
1 2 3 4 5 6 7 8 9 10 11 12 13 14
FL301 ELU0001-141
IC304 AN6873S
IC303 AN6873S
IC302 TC74HC42AF
IC301 MN171X02JP
IC305 MSC7112-01GS -V1K
D303~308 SLR-340C8BF180
IC341 MN1281 (P, Q)
Q343 DTC114YS
D301 1SS119
D331 1SS119
D341 1SS119
RESET
TRH
ON/OFF
KEYIN0
KEYIN1
KEYIN2
4CH DSP
S301 CSRP
SEA ON OFF
FRONTDAP ON OFF
S304 DSP ON OFF
S305 CHURCH
S306 HALL
S307 DOME
S308 LIVE
S309 D CLUB
S310 4ch DSP
S311 DISPLAY
S312 DEMO
S313 PRO LOGIC
S314 3ch LOGIC
S315 FREQENCY
S316 LEVEL -
S317 LEVEL +
S318 MEMORY
S319 PRESET
S321 DSEP
S322 SOOTHING
S323 RELUX
S324 EXCITE
S325 SQUEEZE
S326 VOC.MASK
S327 KEY CTRL
S328 SCRATCH
S329 FLANGER
S300~329 ESP0001-023Z
ENF-064-1
JA301
TO JA291
FROM JB301 OF ENF-064-1

* The voltages on the diagram of ENF-064-1 are measured on the following conditions.

DSP ON : DOLBY PRO LOGIC CENTER MODE NORMAL

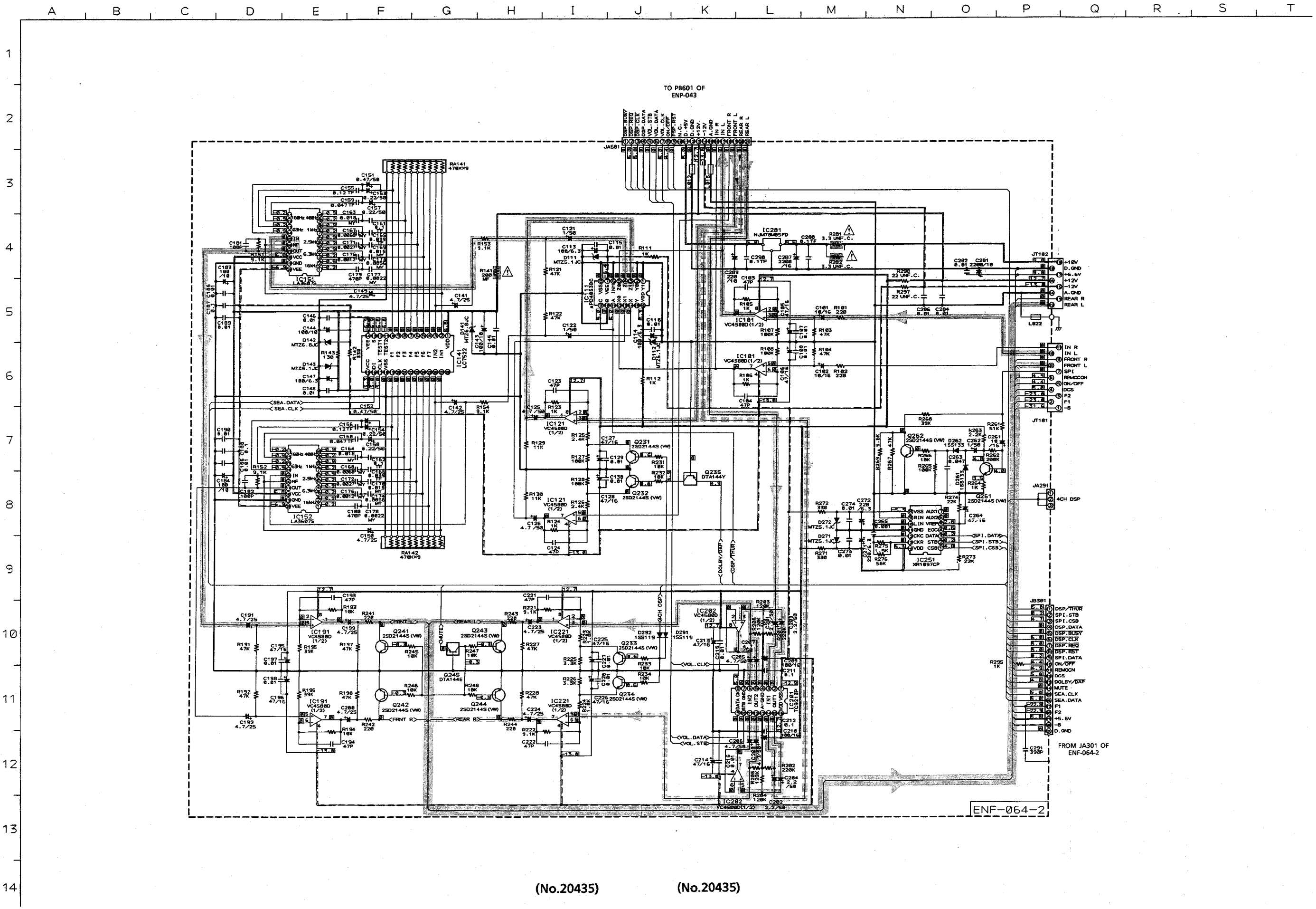
SEA ON : FLAT

The other ones are measured on the conditions of DSP and SEA off.

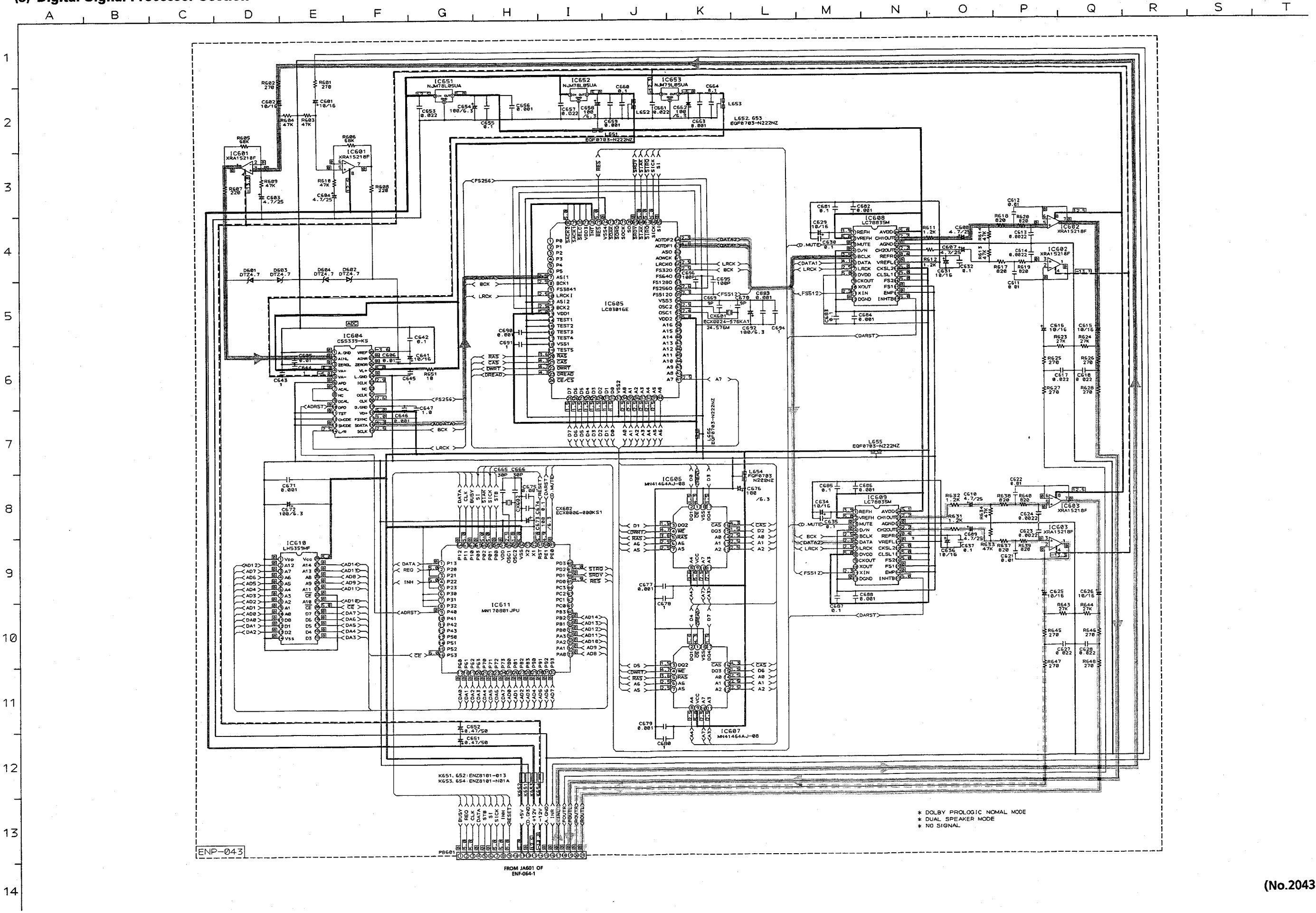
Notes:

1. ——— indicates + B power supply.
2. - - - - indicates – B power supply.
3. ▨ indicates main signal path.
4. ▨ indicates left signal path for front or rear surround and center signal path for dolby pro-logic.
5. ▨ indicates right signal path for front or rear surround and surround signal path for dolby pro-logic.
6. When replacing the parts in the shaded are (▨) and those marked with ⚠ , be sure to use the designated parts to ensure safety.
7. The design and contents are subject to change without notice.

(2) Input/Output Section

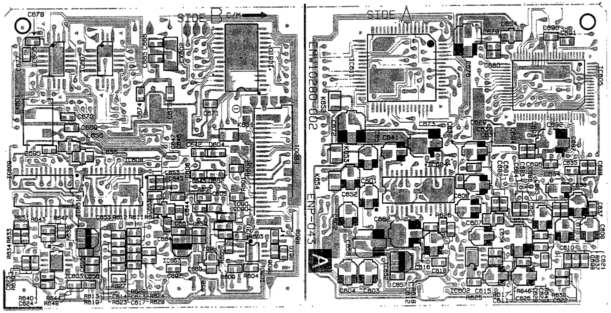

A B C D E F G H I J K L M N O P Q R S T
1 2 3 4 5 6 7 8 9 10 11 12 13 14
TO P8601 OF ENP-043
JA601
RA141 470KX9
RA142 470KX9
IC151 LA3607S
IC152 LA3607S
IC141 LC7522
IC111 BU4053BC
IC121 VC4580D (1/2)
IC101 VC4580D (1/2)
IC281 NJM78M05FD
IC191 VC4580D (1/2)
IC221 VC4580D (1/2)
IC202 VC4580D (1/2)
IC201 LC75213P
IC251 XR1097CP
Q231 2SD2144S (VW)
Q232 2SD2144S (VW)
Q235 DTA144Y
Q241 2SD2144S (VW)
Q242 2SD2144S (VW)
Q243 2SD2144S (VW)
Q244 2SD2144S (VW)
Q245 DTA144E
Q233 2SD2144S (VW)
Q234 2SD2144S (VW)
Q252 2SD2144S (VW)
Q251 2SD2144S (VW)
JT102
+10V
D.GND
+5.6V
+12V
-12V
A.GND
REAR R
REAR L
IN R
IN L
FRONT R
FRONT L
SPI
REMOCON
ON/OFF
DCS
F2
F1
-8
JT101
JA291
4CH DSP
JB301
DSP/THUR
SPI.STB
SPI.CSB
DSP.DATA
DSP.BUSY
DSP.CLK
DSP.REQ
DSP.RST
SPI.DATA
ON/OFF
REMOCON
DCS
DOLBY/DAP
MUTE
SEA.CLK
SEA.DATA
F1
F2
+5.6V
-8
D.GND
FROM JA301 OF ENF-064-2
SEA.DATA
SEA.CLK
FRONT L
REAR L
FRNT R
REAR R
MUTE
VOL.CLK
VOL.DATA
VOL.STB
DOLBY/DAP
DSP/THUR
4CH DSP
SPI.DATA
SPI.STB
SPI.CSB
ENF-064-2

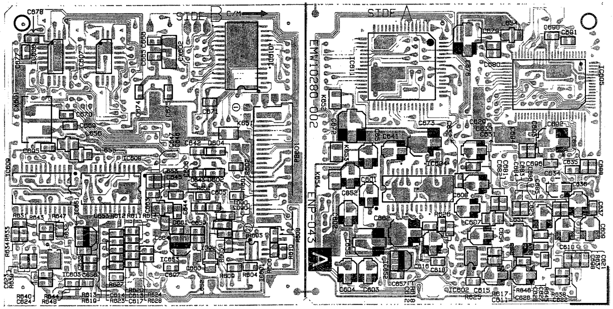
(3) Digital Signal Processor Section


A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
1
2
3
4
5
6
7
8
9
10
11
12
13
14
IC651 NJM78L05UA
IC652 NJM78L05UA
IC653 NJM79L05UA
L652, 653 EQF0703-N222NZ
L651 EQF0703-N222NZ
IC601 XRA15218F
D601 DTZ4.7
D603 DTZ4.7
D604 DTZ4.7
D602 DTZ4.7
ADC
IC604 CS5339-KS
IC605 LC83016E
CX681 ECX0024-576KA1
24.576M
IC608 LC78835M
IC602 XRA15218F
L656 EQF0703-N222NZ
L655 EQF0703-N222NZ
L654 EQF0703-N222NZ
IC606 MN41464AJ-08
IC607 MN41464AJ-08
IC609 LC78835M
IC603 XRA15218F
IC610 LH5359MF
IC611 MN170801JPU
CX602 ECX0006-000KS1
K651, 652: ENZ0101-013
K653, 654: ENZ0101-N01A
P8601
FROM JA601 OF ENF-064-1
ENP-043
∗ DOLBY PROLOGIC NOMAL MODE
∗ DUAL SPEAKER MODE
∗ NO SIGNAL

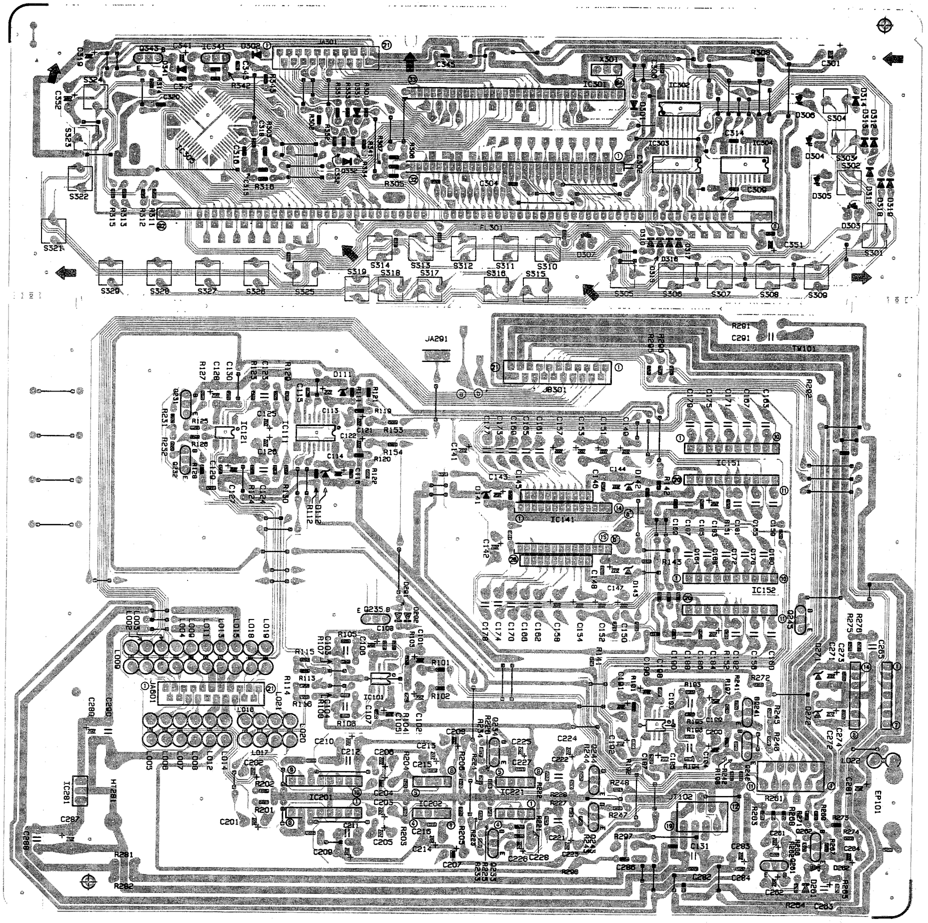
Printed Circuit Boards

(1) Digital Signal Processor P.C. Board (ENP-043)


SIDE B
C/M
SIDE A
EMW10280-002
ENP-043
A


SIDE B
C/M
SIDE A
EMW10280-002
ENP-043
A

(2) Front & Main P.C. Board (ENF-064)


JA301
X301
IC301
IC302
IC303
IC304
IC341
IC305
FL301
C301
C304
C309
C314
C341
C345
C351
C352
Q343
R305
R308
R318
D302
D303
D304
D305
D306
D307
S301
S302
S303
S304
S305
S306
S307
S308
S309
S310
S311
S312
S313
S314
S315
S316
S317
S318
S319
S321
S322
S324
S325
S326
S327
S328
S329
JA291
JB301
R291
C291
TW101
R202
IC121
IC101
IC141
IC151
IC152
IC201
IC202
IC221
IC281
HT281
JA801
JT102
L001
L002
L003
L004
L005
L009
L016
L017
L018
L019
L020
L022
EP101
Q131
Q132
Q233
Q234
Q235
Q243
Q245
D111
D112
D141
D142
D143
R101
R102
R105
R107
R108
R113
R114
R115
R116
R119
R120
R143
R153
R154
R201
R202
R204
R205
R206
R247
R248
R261
R262
R272
R281
R282
R297
R298
C131
C201
C202
C205
C207
C209
C210
C211
C212
C213
C214
C215
C224
C225
C226
C227
C228
C282
C283
C284
C286
C287
C288
C289
C290

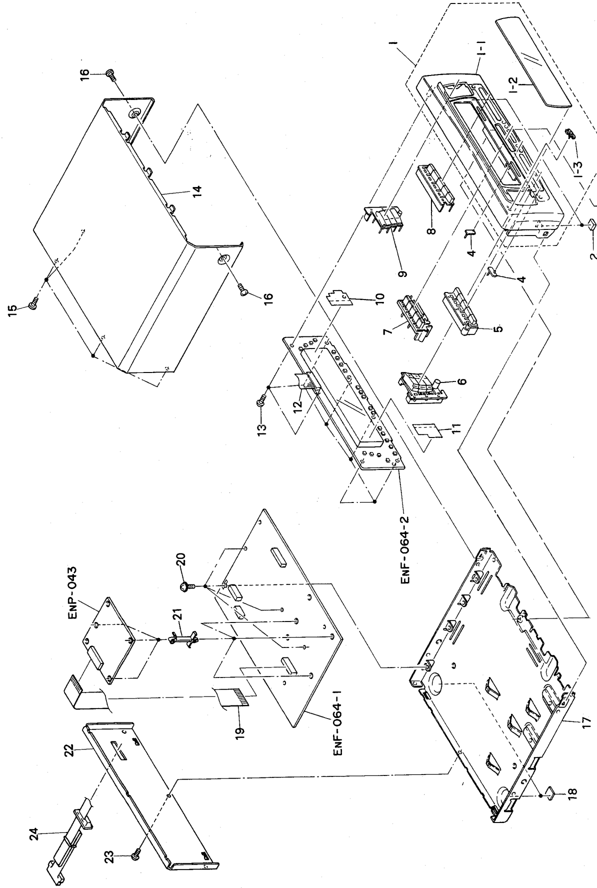
PARTS LIST

Note : All printed circuit boards and its assemblies are not available as service parts.

Contents

General Exploded View and Parts List 2-2
Printed Circuit Board Ass'y and Parts List 2-6
■ ENF-064 ☐ Front & Main PC Board Ass'y 2-8
■ ENP-043 A Digital Signal Processor PC Board Ass'y 2-9

General Exploded View and Parts List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ENF-064-2
ENP-043
ENF-064-1

■ Parts List

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-SEMXG9BKE (S	FRONT PANEL ASSY	1		
	1-1	E102628-007	FRONT PANEL	1		
	1-2	E207611-003	WINDOW SCREEN	1		
	1-3	E406971-221	JVC MARK	1		
	2	E406855-008	SPACER	1	FRONT FOOT	
	3	E74304-001	SPECIAL SCREW	1		
	4	E406673-001	INDICATOR	2		
	5	E207618-004	PUSH BUTTON	1		
	6	E207613-004	PUSH BUTTON ASSY	1		
	7	E207622-002	PUSH BUTTON	1		
	8	E207620-003	PUSH BUTTON	1		
	9	E207616-003	PUSH BUTTON	1		
	10	E407365-001	SPACER	1		
	11	E407364-001	SPACER	1		
	12	E407363-002	FFC CABLE	1		
	13	SDSF2608Z	SCREW	7		
	14	E207626-001	METAL COVER	1		
	15	E73273-003	SPECIAL SCREW	4		
	16	SDSG3008M	SCREW	2		
	17	E102462-001	CHASSIS BASE	1		
	18	E406855-005	SPACER	1	REAR FOOT	
	19	EWR121E-06TT	FLAT WIRE	1		
	20	GBSG3008CC	SCREW	5		
	21	E24624-001	FASTENER	1		
	22	E207624-005	REAR PANEL	1		U
		E207624-005	REAR PANEL	1		US
		E207624-005	REAR PANEL	1		UT
		E207624-006	REAR PANEL	1		A
		E207624-006	REAR PANEL	1		BS
		E207624-006	REAR PANEL	1		EF
		E207624-006	REAR PANEL	1		EN
		E207624-006	REAR PANEL	1		G
		E207624-006	REAR PANEL	1		GI
	23	SBSG3008CC	SCREW	1		
	24	EWP902-032	FLAT WIRE ASSY	1		
	–	E61029-011	NUMBER LABEL	1		

⚠ SAFETY PARTS

The Marks for Designated Areas

A	Australia	EN	Scandinavia	EF	Continental Europe
BS	the U.K.	G	Germany	GI	Itary
UT	Taiwan	US	Singapore	U	Universal Type

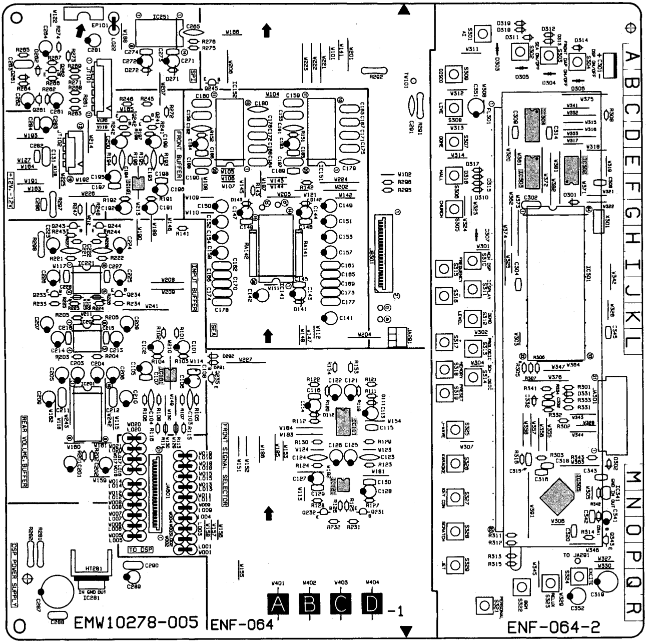
No mark indicates all areas.

Printed Circuit Board Ass'y and Parts List

■ENF-064☐ Front & Main PC Board Ass'y

Note : ENF-064☐ varies according to the areas employed. See note (1) when placing an order.

※ The shaded parts are installed on the foil side of P.C.B (ENF-064).


FRONT BUFFER
INPUT BUFFER
SEA
SPT
FRONT SIGNAL SELECTOR
REAR VOLUME BUFFER
DSP POWER SUPPLY
TO DSP
+12V, -12V
IC251
IC221
IC201
IC281
HT281
IN GND OUT
IC151
IC141
IC131
IC121
JA201
JA101
JB301
IC301
FL301
X301
JA301
IC341
IC302
IC303
IC304
IC305
LIVE
DOME
HALL
CHURCH
FREQUENCY
LEVEL
MEMORY
PRESET
J-WAVE
KARAOKE
KEY CON
SCRATCH
JET
PERSONAL
RELAX
EXCITE
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V401
V402
V403
V404
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ENF-064
ENF-064-2

Note (1)

PC Board Ass'y	Version	Designated Areas
ENF-064 B	A BS EN EF US UT U	Australia the U.K. Scandinavia Continental Europe Singapore Taiwan Universal Type
ENF-064 C	G GI	Germany Italy

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	Q231	2SD2144S(VW)	SILICON ROHM	
	Q232	2SD2144S(VW)	SILICON ROHM	
	Q233	2SD2144S(VW)	SILICON ROHM	
	Q234	2SD2144S(VW)	SILICON ROHM	
	Q235	DTA144ES	SILICON ROHM	
	Q241	2SD2144S(VW)	SILICON ROHM	
	Q242	2SD2144S(VW)	SILICON ROHM	
	Q243	2SD2144S(VW)	SILICON ROHM	
	Q244	2SD2144S(VW)	SILICON ROHM	
	Q245	DTA144ES	SILICON ROHM	
	Q261	2SD2144S(VW)	SILICON ROHM	
	Q262	2SD2144S(VW)	SILICON ROHM	
	Q343	DTC114YS	SILICON ROHM	

⚠ : SAFETY PARTS

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC141	LC7522	I.C. SANYO	
	IC151	LA3607S	I.C. SANYO	
	IC152	LA3607S	I.C. SANYO	
	IC201	TC9213P	I.C. TOSHIBA	
	IC202	XRA15218	I.C. ROHM	
	IC221	XRA15218	I.C. ROHM	
	IC251	XR1097CP	I.C. EXAR JAPAN	
	IC281	NJM78M05FD	I.C. DAINICHI	
	IC301	MN171602JHK	I.C. MATSUSHITA	
	IC301	MN17P1602SDPJHK	I.C. MATSUSHITA	A
	IC301	MN17P1602SDPJHK	I.C. MATSUSHITA	BS
	IC301	MN17P1602SDPJHK	I.C. MATSUSHITA	EF
	IC301	MN17P1602SDPJHK	I.C. MATSUSHITA	EN
	IC301	MN17P1602SDPJHK	I.C. MATSUSHITA	G
	IC301	MN17P1602SDPJHK	I.C. MATSUSHITA	GI
	IC301	MN17P1602SDPJHK	I.C. MATSUSHITA	U
	IC301	MN17P1602SDPJHK	I.C. MATSUSHITA	UT
	IC341	MN1281(P/Q)	I.C. MATSUSHITA	

⚠ : SAFETY PARTS

I.C.s

❋ The following parts are shaded I.C.s.

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC101	XRA15218F	I.C.	
	IC111	TC4053BF	I.C. TOSHIBA	
	IC121	XRA15218F	I.C.	
	IC191	XRA15218F	I.C.	
	IC302	TC74HC42AFT2	I.C. TOSHIBA	
	IC303	AN6873SW	I.C. MATSUSHITA	
	IC304	AN6873SW	I.C. MATSUSHITA	
	IC305	MSC7112-01GSV1K	I.C. NIHON DENSO	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	D111	MTZ5.1JC	ZENER ROHM	
	D112	MTZ5.1JC	ZENER ROHM	
	D141	MTZ6.8JC	ZENER ROHM	
	D142	MTZ6.8JC	ZENER ROHM	
	D143	MTZ5.1JC	ZENER ROHM	
	D261	1SS119	SILICON HITACHI	
	D262	1SS119	SILICON HITACHI	
	D271	MTZ5.1JC	ZENER ROHM	
	D272	MTZ5.1JC	ZENER ROHM	
	D291	1SS119	SILICON HITACHI	
	D292	1SS119	SILICON HITACHI	
	D301	1SS119	SILICON HITACHI	
	D302	1SS119	SILICON HITACHI	
	D303	SLR-342VC3F	L.E.D. ROHM	
	D304	SLR-342VC3F	L.E.D. ROHM	
	D305	SLR-342VC3F	L.E.D. ROHM	
	D306	SLR-342VC3F	L.E.D. ROHM	
	D307	SLR-342VC3F	L.E.D. ROHM	
	D310	1SS119	SILICON HITACHI	
	D311	1SS119	SILICON HITACHI	
	D312	1SS119	SILICON HITACHI	
	D313	1SS119	SILICON HITACHI	
	D314	1SS119	SILICON HITACHI	
	D315	1SS119	SILICON HITACHI	
	D316	1SS119	SILICON HITACHI	
	D317	1SS119	SILICON HITACHI	
	D318	1SS119	SILICON HITACHI	
	D319	1SS119	SILICON HITACHI	
	D331	1SS119	SILICON HITACHI	
	D332	1SS119	SILICON HITACHI	
	D341	1SS119	SILICON HITACHI	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C101	QET41EM-106	10MF 25V ELECTRO	
	C102	QET41EM-106	10MF 25V ELECTRO	
	C103	QCS11HJ-470	47PF 50V CERAMIC	
	C104	QCS11HJ-470	47PF 50V CERAMIC	
	C105	QET41EM-476	47MF 25V ELECTRO	
	C106	QET41EM-476	47MF 25V ELECTRO	
	C107	QCVB1CM-103	0.01MF 16V CERAMIC	
	C108	QCVB1CM-103	0.01MF 16V CERAMIC	
	C113	QET41AM-107	100MF 10V ELECTRO	
	C114	QET41AM-107	100MF 10V ELECTRO	
	C115	QCVB1CM-103	0.01MF 16V CERAMIC	
	C116	QCVB1CM-103	0.01MF 16V CERAMIC	
	C121	QET41HM-105	1MF 50V ELECTRO	
	C122	QET41HM-105	1MF 50V ELECTRO	
	C123	QCS11HJ-470	47PF 50V CERAMIC	
	C124	QCS11HJ-470	47PF 50V CERAMIC	
	C125	QET41HM-475	4.7MF 50V ELECTRO	
	C126	QET41HM-475	4.7MF 50V ELECTRO	
	C127	QET41CM-476	47MF 16V ELECTRO	
	C128	QET41CM-476	47MF 16V ELECTRO	
	C129	QCVB1CM-103	0.01MF 16V CERAMIC	
	C130	QCVB1CM-103	0.01MF 16V CERAMIC	
	C131	QCZ0202-155	1.5MF 25V CERAMIC	
	C141	QET41HM-475	4.7MF 50V ELECTRO	
	C142	QET41HM-475	4.7MF 50V ELECTRO	
	C143	QET41AM-107	100MF 10V ELECTRO	
	C144	QET41AM-107	100MF 10V ELECTRO	
	C145	QCVB1CM-103	0.01MF 16V CERAMIC	
	C146	QCVB1CM-103	0.01MF 16V CERAMIC	
	C147	QET41AM-107	100MF 10V ELECTRO	
	C148	QCVB1CM-103	0.01MF 16V CERAMIC	
	C149	QET41HM-475	4.7MF 50V ELECTRO	
	C150	QET41HM-475	4.7MF 50V ELECTRO	
	C151	QET41HM-474	0.47MF 50V ELECTRO	
	C152	QET41HM-474	0.47MF 50V ELECTRO	
	C153	QETB1HM-224	0.22MF 50V ELECTRO	
	C154	QETB1HM-224	0.22MF 50V ELECTRO	
	C155	QFV81HJ-124	0.12MF 50V T.FILM	
	C156	QFV81HJ-124	0.12MF 50V T.FILM	
	C157	QETB1HM-224	0.22MF 50V ELECTRO	
	C158	QETB1HM-224	0.22MF 50V ELECTRO	
	C159	QFV81HJ-473	0.047MF 50V T.FILM	
	C160	QFV81HJ-473	0.047MF 50V T.FILM	
	C161	QFV81HJ-104	0.1MF 50V T.FILM	
	C162	QFV81HJ-104	0.1MF 50V T.FILM	
	C163	QFN81HJ-183	0.018MF 50V MYLAR	
	C164	QFN81HJ-183	0.018MF 50V MYLAR	
	C165	QFV81HJ-393	0.039MF 50V T.FILM	
	C166	QFV81HJ-393	0.039MF 50V T.FILM	
	C167	QFN81HJ-682	6800PF 50V MYLAR	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C168	QFN81HJ-682	6800PF 50V MYLAR	
	C169	QFN81HJ-153	0.015MF 50V MYLAR	
	C170	QFN81HJ-153	0.015MF 50V MYLAR	
	C171	QFN81HJ-272	2700PF 50V MYLAR	
	C172	QFN81HJ-272	2700PF 50V MYLAR	
	C173	QFN81HJ-562	5600PF 50V MYLAR	
	C174	QFN81HJ-562	5600PF 50V MYLAR	
	C175	QFN81HJ-102	1000PF 50V MYLAR	
	C176	QFN81HJ-102	1000PF 50V MYLAR	
	C177	QFN81HJ-222	2200PF 50V MYLAR	
	C178	QFN81HJ-222	2200PF 50V MYLAR	
	C179	QCS11HJ-471	470PF 50V CERAMIC	
	C180	QCS11HJ-471	470PF 50V CERAMIC	
	C181	QCS11HJ-101	100PF 50V CERAMIC	
	C182	QCS11HJ-101	100PF 50V CERAMIC	
	C183	QET41AM-107	100MF 10V ELECTRO	
	C184	QET41AM-107	100MF 10V ELECTRO	
	C185	QCVB1CM-103	0.01MF 16V CERAMIC	
	C186	QCVB1CM-103	0.01MF 16V CERAMIC	
	C187	QFN81HJ-104	0.1MF 50V MYLAR	
	C188	QFN81HJ-104	0.1MF 50V MYLAR	
	C189	QCVB1CM-103	0.01MF 16V CERAMIC	
	C190	QCVB1CM-103	0.01MF 16V CERAMIC	
	C191	QET41HM-475	4.7MF 50V ELECTRO	
	C192	QET41HM-475	4.7MF 50V ELECTRO	
	C193	QCS11HJ-470	47PF 50V CERAMIC	
	C194	QCS11HJ-470	47PF 50V CERAMIC	
	C195	QET41CM-476	47MF 16V ELECTRO	
	C196	QET41CM-476	47MF 16V ELECTRO	
	C197	QCVB1CM-103	0.01MF 16V CERAMIC	
	C198	QCVB1CM-103	0.01MF 16V CERAMIC	
	C199	QET41HM-475	4.7MF 50V ELECTRO	
	C200	QET41HM-475	4.7MF 50V ELECTRO	
	C201	QETB1HM-225	2.2MF 50V ELECTRO	
	C202	QETB1HM-225	2.2MF 50V ELECTRO	
	C203	QETB1HM-225	2.2MF 50V ELECTRO	
	C204	QETB1HM-225	2.2MF 50V ELECTRO	
	C205	QET41HM-475	4.7MF 50V ELECTRO	
	C206	QET41HM-475	4.7MF 50V ELECTRO	
	C207	QET41HM-475	4.7MF 50V ELECTRO	
	C208	QET41HM-475	4.7MF 50V ELECTRO	
	C210	QET41CM-107	100MF 16V ELECTRO	
	C211	QFV81HJ-104	0.1MF 50V T.FILM	
	C212	QFV81HJ-104	0.1MF 50V T.FILM	
	C213	QET41CM-476	47MF 16V ELECTRO	
	C214	QET41CM-476	47MF 16V ELECTRO	
	C215	QCVB1CM-103	0.01MF 16V CERAMIC	
	C216	QCVB1CM-103	0.01MF 16V CERAMIC	
	C221	QCS11HJ-470	47PF 50V CERAMIC	
	C222	QCS11HJ-470	47PF 50V CERAMIC	
	C223	QET41HM-475	4.7MF 50V ELECTRO	
	C224	QET41HM-475	4.7MF 50V ELECTRO	
	C225	QET41CM-476	47MF 16V ELECTRO	
	C227	QCVB1CM-103	0.01MF 16V CERAMIC	
	C228	QCVB1CM-103	0.01MF 16V CERAMIC	
	C261	QET41EM-106	10MF 25V ELECTRO	
	C262	QET41HM-105	1MF 50V ELECTRO	
	C263	QFN41HJ-473	0.047MF 50V MYLAR	
	C264	QET41CM-476	47MF 16V ELECTRO	
	C265	QFN81HJ-102	1000PF 50V MYLAR	
	C271	QETB0JM-227	220MF 6.3V ELECTRO	
	C272	QETB0JM-227	220MF 6.3V ELECTRO	
	C273	QCVB1CM-103	0.01MF 16V CERAMIC	
	C274	QCVB1CM-103	0.01MF 16V CERAMIC	
	C281	QET41AM-227	220MF 10V ELECTRO	
	C282	QCVB1CM-103	0.01MF 16V CERAMIC	
	C284	QCVB1CM-103	0.01MF 16V CERAMIC	
	C286	QCVB1CM-103	0.01MF 16V CERAMIC	
	C287	QETB1CM-228M	2200MF 16V ELECTRO	
	C288	QFV81HJ-104	0.1MF 50V T.FILM	
	C289	QET41AM-227	220MF 10V ELECTRO	
	C290	QFV81HJ-104	0.1MF 50V T.FILM	
	C291	QCS21HJ-391	390PF 50V CERAMIC	
	C301	QEAD0HZ-479A	47000MF ELECTRO	
	C302	QCZ0202-155	1.5MF 25V CERAMIC	
	C304	QCVB1CM-103	0.01MF 16V CERAMIC	
	C306	QCVB1CM-103	0.01MF 16V CERAMIC	
	C309	QCVB1CM-103	0.01MF 16V CERAMIC	
	C314	QCVB1CM-103	0.01MF 16V CERAMIC	
	C315	QCBB1HK-101	100PF 50V CERAMIC	
	C316	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C318	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C319	QER51VM-476	47MF 35V ELECTRO	
	C320	QCVB1CM-103	0.01MF 16V CERAMIC	
	C332	QCBB1HK-471	470PF 50V CERAMIC	
	C341	QER51HM-474G	0.47MF 50V ELECTRO	
	C342	QCVB1CM-103	0.01MF 16V CERAMIC	
	C343	QCBB1HK-101	100PF 50V CERAMIC	
	C345	QCVB1CM-103	0.01MF 16V CERAMIC	
	C351	QEK51HM-226	22MF 50V ELECTRO	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C352	QEK51HM-226	22MF 50V ELECTRO	
	C361	QCBB1HK-221	220PF 50V CERAMIC	A
	C361	QCBB1HK-221	220PF 50V CERAMIC	BS
	C361	QCBB1HK-221	220PF 50V CERAMIC	EF
	C361	QCBB1HK-221	220PF 50V CERAMIC	EN
	C361	QCBB1HK-221	220PF 50V CERAMIC	U
	C361	QCBB1HK-221	220PF 50V CERAMIC	US
	C361	QCBB1HK-221	220PF 50V CERAMIC	UT

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R101	QRD167J-221	220 1/6W CARBON	
	R102	QRD167J-221	220 1/6W CARBON	
	R103	QRD167J-473	47K 1/6W CARBON	
	R104	QRD167J-473	47K 1/6W CARBON	
	R105	QRD167J-102	1K 1/6W CARBON	
	R106	QRD167J-102	1K 1/6W CARBON	
	R107	QRD167J-104	100K 1/6W CARBON	
	R108	QRD167J-104	100K 1/6W CARBON	
	R111	QRD167J-102	1K 1/6W CARBON	
	R112	QRD167J-102	1K 1/6W CARBON	
	R121	QRD167J-473	47K 1/6W CARBON	
	R122	QRD167J-473	47K 1/6W CARBON	
	R123	QRD167J-102	1K 1/6W CARBON	
	R124	QRD167J-102	1K 1/6W CARBON	
	R125	QRD167J-242	2.4K 1/6W CARBON	
	R126	QRD167J-242	2.4K 1/6W CARBON	
	R127	QRD167J-104	100K 1/6W CARBON	
	R128	QRD167J-104	100K 1/6W CARBON	
	R129	QRD167J-473	47K 1/6W CARBON	
	R130	QRD167J-473	47K 1/6W CARBON	
⚠	R141	QRV144F-2200A	1/4W M.FILM	
	R142	QRD167J-301	300 1/6W CARBON	
	R143	QRD167J-131	130 1/6W CARBON	
	R151	QRD167J-912	9.1K 1/6W CARBON	
	R152	QRD167J-912	9.1K 1/6W CARBON	
	R153	QRD167J-912	9.1K 1/6W CARBON	
	R154	QRD167J-912	9.1K 1/6W CARBON	
	R191	QRD167J-473	47K 1/6W CARBON	
	R192	QRD167J-473	47K 1/6W CARBON	
	R193	QRD167J-103	10K 1/6W CARBON	
	R194	QRD167J-103	10K 1/6W CARBON	
	R195	QRD167J-393	39K 1/6W CARBON	
	R196	QRD167J-393	39K 1/6W CARBON	
	R197	QRD167J-473	47K 1/6W CARBON	
	R198	QRD167J-473	47K 1/6W CARBON	
	R201	QRD167J-224	220K 1/6W CARBON	
	R202	QRD167J-224	220K 1/6W CARBON	
	R203	QRD167J-124	120K 1/6W CARBON	
	R204	QRD167J-124	120K 1/6W CARBON	
	R205	QRD167J-124	120K 1/6W CARBON	
	R206	QRD167J-124	120K 1/6W CARBON	
	R221	QRD167J-912	9.1K 1/6W CARBON	
	R222	QRD167J-912	9.1K 1/6W CARBON	
	R223	QRD167J-182	1.8K 1/6W CARBON	
	R224	QRD167J-182	1.8K 1/6W CARBON	
	R225	QRD167J-332	3.3K 1/6W CARBON	
	R226	QRD167J-332	3.3K 1/6W CARBON	
	R227	QRD167J-473	47K 1/6W CARBON	
	R228	QRD167J-473	47K 1/6W CARBON	
	R231	QRD167J-103	10K 1/6W CARBON	
	R232	QRD167J-103	10K 1/6W CARBON	
	R233	QRD167J-103	10K 1/6W CARBON	
	R234	QRD167J-103	10K 1/6W CARBON	
	R241	QRD167J-221	220 1/6W CARBON	
	R242	QRD167J-221	220 1/6W CARBON	
	R243	QRD167J-221	220 1/6W CARBON	
	R244	QRD167J-221	220 1/6W CARBON	
	R245	QRD167J-103	10K 1/6W CARBON	
	R246	QRD167J-103	10K 1/6W CARBON	
	R247	QRD167J-103	10K 1/6W CARBON	
	R248	QRD167J-103	10K 1/6W CARBON	
	R261	QRD167J-513	51K 1/6W CARBON	
	R262	QRD167J-204	200K 1/6W CARBON	
	R263	QRD167J-222	2.2K 1/6W CARBON	
	R264	QRD167J-102	1K 1/6W CARBON	
	R265	QRD167J-104	100K 1/6W CARBON	
	R266	QRD167J-103	10K 1/6W CARBON	
	R267	QRD167J-473	47K 1/6W CARBON	
	R268	QRD167J-393	39K 1/6W CARBON	
	R269	QRD167J-562	5.6K 1/6W CARBON	
	R271	QRD167J-391	390 1/6W CARBON	
	R272	QRD167J-391	390 1/6W CARBON	
	R273	QRD167J-223	22K 1/6W CARBON	
	R274	QRD167J-223	22K 1/6W CARBON	
	R275	QRD167J-152	1.5K 1/6W CARBON	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R276	QRD167J-563	56K 1/6W CARBON	
	R281	QRD148J-3R3	3.3 1/4W CARBON	
	R282	QRD148J-3R3	3.3 1/4W CARBON	
	R291	QRD148J-3R3	3.3 1/4W CARBON	
	R292	QRD148J-3R3	3.3 1/4W CARBON	
	R295	QRD167J-102	1K 1/6W CARBON	
	R296	QRD167J-221	220 1/6W CARBON	
	R297	QRD148J-220	22 1/4W CARBON	
	R298	QRD148J-220	22 1/4W CARBON	
	R301	QRD167J-103	10K 1/6W CARBON	
	R302	QRD167J-103	10K 1/6W CARBON	
	R303	QRD167J-473	47K 1/6W CARBON	
	R305	QRD167J-103	10K 1/6W CARBON	
	R306	QRD167J-103	10K 1/6W CARBON	
	R307	QRD167J-103	10K 1/6W CARBON	
	R308	QRD167J-470	47 1/6W CARBON	
	R311	QRD167J-431	430 1/6W CARBON	
	R312	QRD167J-391	390 1/6W CARBON	
	R313	QRD167J-431	430 1/6W CARBON	
	R314	QRD167J-511	510 1/6W CARBON	
	R315	QRD167J-331	330 1/6W CARBON	
	R316	QRD167J-331	330 1/6W CARBON	
	R331	QRD167J-221	220 1/6W CARBON	
	R332	QRD167J-221	220 1/6W CARBON	
	R333	QRD167J-473	47K 1/6W CARBON	
	R334	QRD167J-473	47K 1/6W CARBON	
	R341	QRD167J-102	1K 1/6W CARBON	
	R342	QRD167J-103	10K 1/6W CARBON	
	R343	QRD167J-223	22K 1/6W CARBON	
	RA141	QRB099J-474	470K 1/10W R.NETWORK	
	RA142	QRB099J-474	470K 1/10W R.NETWORK	
	RA301	QRB169J-104	100K 1/10W R.NETWORK	A
	RA301	QRB169J-104	100K 1/10W R.NETWORK	BS
	RA301	QRB169J-104	100K 1/10W R.NETWORK	EF
	RA301	QRB169J-104	100K 1/10W R.NETWORK	EN
	RA301	QRB169J-104	100K 1/10W R.NETWORK	G
	RA301	QRB169J-104	100K 1/10W R.NETWORK	GI
	RA301	QRB169J-104	100K 1/10W R.NETWORK	U
	RA301	QRB169J-104	100K 1/10W R.NETWORK	UT
	RA302	QRB119J-104	100K 1/10W R.NETWORK	A
	RA302	QRB119J-104	100K 1/10W R.NETWORK	BS
	RA302	QRB119J-104	100K 1/10W R.NETWORK	EF
	RA302	QRB119J-104	100K 1/10W R.NETWORK	EN
	RA302	QRB119J-104	100K 1/10W R.NETWORK	G
	RA302	QRB119J-104	100K 1/10W R.NETWORK	GI
	RA302	QRB119J-104	100K 1/10W R.NETWORK	U
	RA302	QRB119J-104	100K 1/10W R.NETWORK	UT

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		E308193-001	FL HOLDER	
		E3400-431	SPACER	
		E75933-001	SPACER	
		SBSB3008Z	SCREW	
	L012	ENZ8101-007	INDUCTOR	
	L015	ENZ8101-007	INDUCTOR	
	L022	ENZ8101-007	INDUCTOR	
	S301	ESP0001-023M	TACT SWITCH(CSRP)	
	S302	ESP0001-023M	TACT SWITCH(SEA ON/OFF)	
	S303	ESP0001-023M	TACT SWITCH(FRONT DAP ON/OFF)	
	S304	ESP0001-023M	TACT SWITCH(DSP ON/OFF)	
	S305	ESP0001-023M	TACT SWITCH(CHURCH)	
	S306	ESP0001-023M	TACT SWITCH(HALL)	
	S307	ESP0001-023M	TACT SWITCH(DOME)	
	S308	ESP0001-023M	TACT SWITCH(LIVE)	
	S309	ESP0001-023M	TACT SWITCH(D.CLUB)	
	S310	ESP0001-023M	TACT SWITCH(4CH DSP)	
	S311	ESP0001-023M	TACT SWITCH(DISPLAY)	
	S312	ESP0001-023M	TACT SWITCH(DEMO)	
	S313	ESP0001-023M	TACT SWITCH(PROLOGIC)	
	S314	ESP0001-023M	TACT SWITCH(3CH LOGIC)	
	S315	ESP0001-023M	TACT SWITCH(FREQUENCY)	
	S316	ESP0001-023M	TACT SWITCH(LEVEL −)	
	S317	ESP0001-023M	TACT SWITCH(LEVEL +)	
	S318	ESP0001-023M	TACT SWITCH(MEMORY)	
	S319	ESP0001-023M	TACT SWITCH(PRESET)	
	S321	ESP0001-023M	TACT SWITCH(DSEP)	
	S322	ESP0001-023M	TACT SWITCH(SOOTHING)	
	S323	ESP0001-023M	TACT SWITCH(RELUX)	
	S324	ESP0001-023M	TACT SWITCH(EXCITE)	
	S325	ESP0001-023M	TACT SWITCH(SOUEEZE)	
	S326	ESP0001-023M	TACT SWITCH(VOC MASK)	
	S327	ESP0001-023M	TACT SWITCH(KEY CTRL)	
	S328	ESP0001-023M	TACT SWITCH(SCRATCH)	
	S329	ESP0001-023M	TACT SWITCH(FLANGER)	

⚠ : SAFETY PARTS

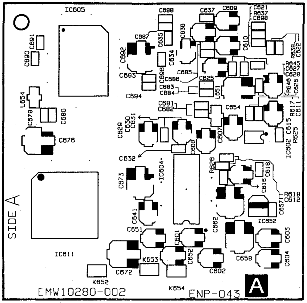
Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	X301	ECX0060-000EM	RESONATOR	
	EP101	E70859-001	EARTH PLATE	
	FL301	ELU0001-141	FL TUBE	
	HT281	E70306-001	HEAT SINK	
	JA291	EMV7122-103	CONNECTOR(3PIN)	
	JA301	EMV7123-021R	CONNECTOR(21PIN)	
	JA601	EMV7123-021	CONNECTOR(21PIN)	
	JB301	EMV7123-021	CONNECTOR(21PIN)	
	JT101	EMV7141-011	CONNECTOR(11PIN)	
	JT102	EMV7141-008M	CONNECTOR(8PIN)	
	TW101	EWT011-158	TERMINAL WIRE	

⚠ : SAFETY PARTS

■ENP-043 A Digital Signal Processor PC Board Ass'y

- **Surface**


IC605
C688
C637
C609
C621
R637
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C691
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C635
C636
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IC602
C632
IC604
R626
C618
C673
C616
R618
C612
C657
SIDE A
C641
C662
IC652
C651
C601
C603
IC611
K653
C652
C658
C604
C672
C602
K652
EMW10280-002
K654
ENP-043
A

I.C.s

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	IC602	XRA15218FT2	I.C. ROHM	
	IC604	CS5339-KS	I.C. ASAHI	
	IC605	LC83016E	I.C. SANYO	
	IC611	MN170801JPU	I.C. MATUSHITA	
	IC652	NJM78L05UA	I.C. DAIHITI	

⚠ SAFETY PARTS

Capacitors

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	C601	NEH11CM-106RZ	10MF 10V CERAMIC	
	C602	NEH11CM-106RZ	10MF 10V CERAMIC	
	C603	NEH11EM-475RZ	4.7MF 25V CERAMIC	
	C604	NEH11EM-475RZ	4.7MF 25V CERAMIC	
	C607	NEH11EM-475RZ	4.7MF 25V CERAMIC	
	C608	NEH11EM-475RZ	4.7MF 25V CERAMIC	
	C609	NEH11EM-475RZ	4.7MF 25V CERAMIC	
	C610	NEH11EM-475RZ	4.7MF 25V CERAMIC	
	C611	NCB21HK-103AY	0.01MF 50V CERAMIC	
	C612	NCB21HK-103AY	0.01MF 50V CERAMIC	
	C615	NEH11CM-106RZ	10MF 16V CERAMIC	
	C616	NEH11CM-106RZ	10MF 16V CERAMIC	
	C618	NCB21HK-223AY	0.022MF 50V CERAMIC	
	C621	NCB21HK-103AY	0.01MF 50V CERAMIC	
	C622	NCB21HK-103AY	0.01MF 50V CERAMIC	
	C625	NEH11CM-106RZ	10MF 16V CERAMIC	
	C626	NEH11CM-106RZ	10MF 16V CERAMIC	
	C627	NCB21HK-223AY	0.022MF 50V CERAMIC	
	C628	NCB21HK-223AY	0.022MF 50V CERAMIC	
	C629	NEH11CM-106RZ	10MF 16V CERAMIC	
	C630	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C631	NEH11CM-106RZ	10MF 16V CERAMIC	
	C632	NCS21HJ-101AY	100PF 50V CERAMIC	
	C634	NEH11CM-106RZ	10MF 16V CERAMIC	
	C635	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C636	NEH11CM-106RZ	10MF 16V CERAMIC	
	C637	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C641	NEH11CM-106RZ	10MF 16V CERAMIC	
	C651	NEH11HM-474RZ	0.47MF 50V CERAMIC	
	C652	NEH11HM-474RZ	0.47MF 50V CERAMIC	
	C654	NEH10JM-107RZ	100MF 6.3V CERAMIC	
	C657	NCB21HK-223AY	0.022MF 50V CERAMIC	
	C658	NEH10JM-107RZ	100MF 6.3V CERAMIC	
	C662	NEH10JM-107RZ	100MF 6.3V CERAMIC	
	C672	NEH10JM-107RZ	100MF 6.3V CERAMIC	

⚠ SAFETY PARTS

Capacitors

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	C673	NEH10JM-107RZ	100MF 6.3V CERAMIC	
	C676	NEH10JM-107RZ	100MF 6.3V CERAMIC	
	C679	NCB21HK-102AY	1000PF 50V CERAMIC	
	C680	NCF21CZ-105AY	1MF 16V CERAMIC	
	C681	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C682	NCB21HK-102AY	1000PF 50V CERAMIC	
	C683	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C684	NCB21HK-102AY	1000PF 50V CERAMIC	
	C685	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C686	NCB21HK-102AY	1000PF 50V CERAMIC	
	C687	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C688	NCB21HK-102AY	1000PF 50V CERAMIC	
	C690	NCB21HK-102AY	1000PF 50V CERAMIC	
	C691	NCF21CZ-105AY	1MF 16V CERAMIC	
	C692	NEH10JM-107RZ	100MF 6.3V CERAMIC	
	C693	NCB21HK-102AY	1000PF 50V CERAMIC	
	C694	NCF21CZ-105AY	1MF 16V CERAMIC	
	C696	NCS21HJ-101AY	100MF 50V CERAMIC	
	C698	NCF21CZ-105AY	1MF 16V CERAMIC	

⚠ SAFETY PARTS

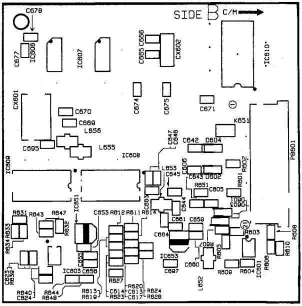
Resistors

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	R617	NRSA02F-821NY	METAL GLAZE	
	R618	NRSA02F-821NY	METAL GLAZE	
	R625	NRSA02F-271NY	METAL GLAZE	
	R626	NRSA02F-271NY	METAL GLAZE	
	R637	NRSA02F-821NY	METAL GLAZE	
	R638	NRSA02F-821NY	METAL GLAZE	
	R645	NRSA02F-271NY	METAL GLAZE	
	R646	NRSA02F-271NY	METAL GLAZE	

Others

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	K652	ENZ8101-013T	FERRITE BEADS	
	K653	ENZ8101-N01AY	FERRITE BEADS	
	K654	ENZ8101-N01AY	FERRITE BEADS	
	L651	EQF0703-N222NZ	EMI FILTER	
	L654	EQF0703-N222NZ	EMI FILTER	

- **Foil**



SIDE B
C/M
C678
C677
IC606
IC607
C665
C666
CX602
IC610
CX601
C674
C675
C671
①
C670
C669
L656
K651
C695
L655
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C648
C642
D604
IC608
IC609
PB601
C606
L653
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IC603
C656
R627
L652
R640
C624
R644
R648
R613
R619
C614
R623
R620
C613
C617
R624
R628

I.C.s

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	IC601	XRA15218FT2	I.C. ROHM	
	IC603	XRA15218FT2	I.C. ROHM	
	IC606	MN41464AJ-08W	I.C. MATUSHTA	
	IC607	MN41464AJ-08W	I.C. MATUSHTA	
	IC608	LC78835MX	I.C. SANYO	
	IC609	LC78835MX	I.C. SANYO	
	IC610	LH5359MFT1	I.C. SHAP	
	IC633	NJM79L05UA	I.C. DAINITI	

⚠ SAFETY PARTS

Diodes

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	D601	DTZ4.7(C)-X	ZENER ROHM	
	D602	DTZ4.7(C)-X	ZENER ROHM	
	D603	DTZ4.7(C)-X	ZENER ROHM	
	D604	DTZ4.7(C)-X	ZENER ROHM	

⚠ SAFETY PARTS

Capacitors

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	C605	NCB21HK-103AY	0.01MF 50V CERAMIC	
	C606	NCB21HK-103AY	0.01MF 50V CERAMIC	
	C613	NCS21HJ-222AY	2200PF 50V CERAMIC	
	C614	NCS21HJ-222AY	2200PF 50V CERAMIC	
	C617	NCB21HK-223AY	0.022MF 50V CERAMIC	
	C623	NCS21HJ-222AY	2200PF 50V CERAMIC	
	C624	NCS21HJ-222AY	2200PF 50V CERAMIC	
	C642	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C643	NCF21CZ-105AY	1MF 16V CERAMIC	
	C644	NCF21CZ-105AY	1MF 16V CERAMIC	
	C645	NCF21CZ-105AY	1MF 16V CERAMIC	
	C646	NCB21HK-102AY	1000PF 50V CERAMIC	
	C647	NCF21CZ-105AY	1MF 16V CERAMIC	
	C653	NCB21HK-223AY	0.022MF 50V CERAMIC	
	C655	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C656	NCB21HK-102AY	1000PF 50V CERAMIC	
	C659	NCB21HK-102AY	1000PF 50V CERAMIC	
	C660	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C661	NCB21HK-223AY	0.022MF 50V CERAMIC	
	C663	NCB21HK-102AY	1000PF 50V CERAMIC	

⚠ SAFETY PARTS

Capacitors

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	C664	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C665	NCS21HJ-300AY	30PF 50V CERAMIC	
	C666	NCS21HJ-300AY	30PF 50V CERAMIC	
	C669	NCS21HJ-9R0AY	9PF 50V CERAMIC	
	C670	NCS21HJ-9R0AY	9PF 50V CERAMIC	
	C671	NCB21HK-102AY	1000PF 50V CERAMIC	
	C674	NCF21HZ-104AY	0.1MF 50V CERAMIC	
	C675	NCB21HK-102AY	1000PF 50V CERAMIC	
	C677	NCB21HK-102AY	1000PF 50V CERAMIC	
	C678	NCF21CZ-105AY	1MF 16V CERAMIC	
	C695	NCS21HJ-101AY	100PF 50V CERAMIC	
	C697	NCF21CZ-105AY	1MF 16V CERAMIC	

⚠ SAFETY PARTS

Resistors

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	R601	NRSA02F-271NY	METAL GLAZE	
	R602	NRSA02F-271NY	METAL GLAZE	
	R603	NRSA02F-473NY	METAL GLAZE	
	R604	NRSA02F-473NY	METAL GLAZE	
	R605	NRSA02F-683NY	METAL GLAZE	
	R606	NRSA02F-683NY	METAL GLAZE	
	R607	NRSA02F-221MY	METAL GLAZE	
	R608	NRSA02F-221MY	METAL GLAZE	
	R609	NRSA02F-473NY	METAL GLAZE	
	R610	NRSA02F-473NY	METAL GLAZE	
	R611	NRSA02F-122NY	METAL GLAZE	
	R612	NRSA02F-122NY	METAL GLAZE	
	R613	NRSA02F-473NY	METAL GLAZE	
	R614	NRSA02F-473NY	METAL GLAZE	
	R619	NRSA02F-821NY	METAL GLAZE	
	R620	NRSA02F-821NY	METAL GLAZE	
	R623	NRSA02F-273NY	METAL GLAZE	
	R624	NRSA02F-273NY	METAL GLAZE	
	R627	NRSA02F-271NY	METAL GLAZE	
	R628	NRSA02F-271NY	METAL GLAZE	
	R631	NRSA02F-122NY	METAL GLAZE	
	R632	NRSA02F-122NY	METAL GLAZE	
	R633	NRSA02F-473NY	METAL GLAZE	
	R634	NRSA02F-473NY	METAL GLAZE	
	R639	NRSA02F-821NY	METAL GLAZE	
	R640	NRSA02F-821NY	METAL GLAZE	
	R643	NRSA02F-273NY	METAL GLAZE	
	R644	NRSA02F-273NY	METAL GLAZE	
	R647	NRSA02F-271NY	METAL GLAZE	
	R648	NRSA02F-271NY	METAL GLAZE	
	R651	NRSA02F-100NY	METAL GLAZE	

⚠ SAFETY PARTS

Others

⚠	ITEM	PARTS NUMBER	DESCRIPTION	AREA
	K651	ENZ8101-0137	FERRITE BEADS	
	L652	EQF0703-N222NZ	EMI FILTER	
	L653	EQF0703-N222NZ	EMI FILTER	
	L655	EQF0703-N222NZ	EMI FILTER	
	L656	EQF0703-N222NZ	EMI FILTER	
	CX601	ECX0024-576KA1T	RESONATOR	
	CX602	ECX0006-000KS1T	RESONATOR	
	PB601	EMV7147-021E	CONNECTOR (21PIN) TO DSP:MAIN	

⚠ SAFETY PARTS

— MEMO —

— MEMO —

JVC
VICTOR COMPANY OF JAPAN, LIMITED
AUDIO PRODUCTS DIVISION, 1644, Shimotsuruma, Yamato-shi, Kanagawa-ken, 242, JAPAN

(No.20435)

Printed by: Schaltungsdienst Lange, Berlin (GERMANY)

9306 (S)

1019 65

-300-

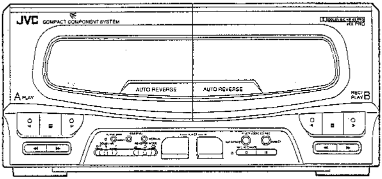
JVC -01576

JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

CA-MXG9BK/XT-MXG9BK
(Unit No. TD-MXG9BK)



Note
This manual is for one part of the titled model consisting of the plural units as detailed.

Unit No Consisted	*Part of Model*	*Manual No*
TD-MXG9BK	*CASSETTE DECK*	*20437*
RX-MXG9BK	*TUNER-AMPLIFIER*	*20434*
SE-MXG9BK	*S.E.A-GRAPHIC EQUALIZER*	*20435*
XL-MXG9BK	*COMPACT DISC PLAYER*	*20436*

** For instruction manual, packing materials and accessories, please refer to the RX-MXG9BK (S.M.No.20434).*
** RX-MXG9BK is needed (for power supply etc.) when servicing.*

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Schematic Diagrams .... Insertion
Printed Circuit Boards .... Insertion
Parts List .... Insertion

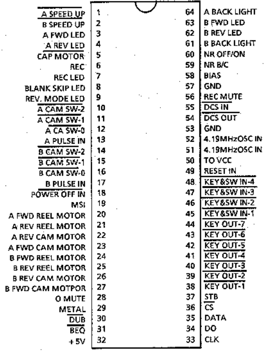
No. 20437
June 1993

1576

Description of Major LSIs

■ HD614081SD46(IC401) : System controller

1. Terminal Layout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B SPEED UP 2
A FWD LED 3
A REV LED 4
CAP MOTOR 5
REC 6
REC LED 7
BLANK SKIP LED 8
REV. MODE LED 9
A CAM SW-2 10
A CAM SW-1 11
A CA SW-0 12
A PULSE IN 13
B CAM SW-2 14
B CAM SW-1 15
B CAM SW-0 16
B PULSE IN 17
POWER OFF IN 18
MSI 19
A FWD REEL MOTOR 20
A REV REEL MOTOR 21
A REV CAM MOTOR 22
A FWD CAM MOTOR 23
B FWD REEL MOTOR 24
B REV REEL MOTOR 25
B REV CAM MOTOR 26
B FWD CAM MOTPOR 27
O MUTE 28
METAL 29
DUB 30
BEQ 31
+5V 32
64 A BACK LIGHT
63 B FWD LED
62 B REV LED
61 B BACK LIGHT
60 NR OFF/ON
59 NR B/C
58 BIAS
57 GND
56 REC MUTE
55 DCS IN
54 DCS OUT
53 GND
52 4.19MHzOSC IN
51 4.19MHzOSC IN
50 TO VCC
49 RESET IN
48 KEY&SW IN-4
47 KEY&SW IN-3
46 KEY&SW IN-2
45 KEY&SW IN-1
44 KEY OUT-7
43 KEY OUT-6
42 KEY OUT-5
41 KEY OUT-4
40 KEY OUT-3
39 KEY OUT-2
38 KEY OUT-1
37 STB
36 CS
35 DATA
34 DO
33 CLK

2. Key Matrix

	KEY&SW-1 (Pin45)	KEY&SW-2 (Pin46)	KEY&SW-3 (Pin47)	KEY&SW-4 (Pin48)
KEY OUT 1 (Pin38)	A ◀	A ◀◀	A ▶▶	A ▶
KEY OUT 2 (Pin39)	B ◀	B ◀◀	B ▶▶	B ▶
KEY OUT 3 (Pin40)	A ■	B ■	B ●	B ❚❚
KEY OUT 4 (Pin41)	A▶▶B	A▶B	—	BLANK SKIP
KEY OUT 5 (Pin42)	FUZZY DIRECT	FUZZY AUTO	DOLBY B	DOLBY C
KEY OUT 6 (Pin43)	B PACK	REV REC	FWD REC	A PACK
KEY OUT 7 (Pin44)	REV.MODE ↩	B CrO2	B METAL	REV.MODE ⟲

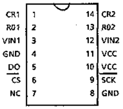
3. Terminal Description

Pin	Symbol	I/O	Description	Pin	Symbol	I/O	Description
1	A SPEED UP	O	A deck speed control output	33	CLK	O	Clock for data transfer
2	B SPEED UP	O	B deck speed control output	34	DO	O	Data output
3	A FWD LED	O	Indication signal for A forward LED	35	DATA	O	Data output
4	A REV LED	O	Indication signal for A reverse LED	36	CS	O	Chip select signal
5	CAP MOTOR	O	Capstan motor control signal	37	STB	O	Strobe signal output
6	REC	O	Recording control signal (H : REC)	38	KO 1	O	Key matrix output
7	B REC LED	O	Indication signal for recording	39	KO 2	O	〃
8	BLA. SKIP LED	O	Indication signal for Blank skip	40	KO 3	O	〃
9		--	Not used	41	KO 4	O	〃
10	A CAM SW 2	I	Input terminal for mech. and head status	42	KO 5	O	〃
11	A CAM SW 1	I	〃	43	KO 6	O	〃
12	A CAM SW 0	I	〃	44	KO 7	O	〃
13	A PULSE IN	I	Pulse signal input from Reel	45	KI 1	I	Key matrix input
14	B CAM SW 2	I	Input terminal for mech. and head status	46	KI 2	I	〃
15	B CAM SW 1	I	〃	47	KI 3	I	〃
16	B CAM SW 0	I	〃	48	KI 4	I	〃
17	B PULSE	I	Pulse signal input from Reel	49	RESET	I	Reset signal input
18	POW. OFF IN	I	Power ON/OFF signal input	50	TO VCC	--	Connected to +5V
19	MS IN	I	Blank detect terminal for music scan	51	4.19MHzOSC	I/O	Clock oscillation terminal
20	AFWD REEL	O	Reel motor control signal	52	4.19MHzOSC	I/O	〃
21	A REV REEL	O	Reel motor control signal	53	GND	--	Ground
22	A REV CAM	O	Cam motor control signal	54	DCS OUT	O	Compulink signal output
23	AFWD CAM	O	Cam motor control signal	55	DCS IN	I	Compulink signal input
24	B FWD REEL	O	Reel motor control signal	56	REC. MUTE	O	Recording mute signal output
25	B REV REEL	O	Reel motor control signal	57	GND	--	Ground
26	B REV CAM	O	Cam motor control signal	58	BIAS	O	ON / OFF signal for bias circuit
27	B FWD CAM	O	Cam motor control signal	59	NR B/C	O	NR B / C switching signal
28	OMUTE	O	Play muting control	60	NR OFF/ON	O	NR ON/OFF signal output
29	METAL	O	Recording bias control for METAL tape	61		--	Not used
30	DUB	O	High speed dubbing control	62	B REV LED	O	Indication signal for B reverse
31	BEQ	O	Equalizer switching signal	63	B FWD LED	O	Indication signal for B forward
32	+5V	--	Power supply	64		--	Not used

Internal Block Diagram of Other ICs

■ M62302P(IC202) : A/D converter for AV level

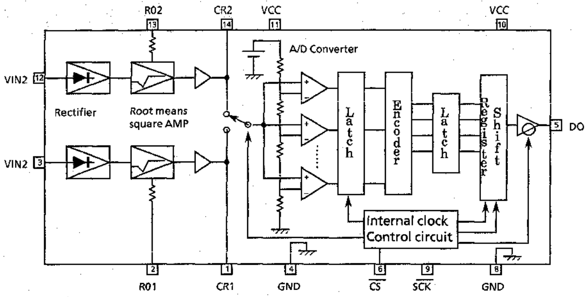
1. Terminal Layout


CR1
R01
VIN1
GND
$\overline{\text{DO}}$
$\overline{\text{CS}}$
NC
1
2
3
4
5
6
7
14
13
12
11
10
9
8
CR2
R02
VIN2
VCC
VCC
SCK
GND

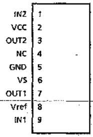
2.Terminal Description

Pin No.	Symbol	I/O	Description
1 14	CR1 CR2	–	This is a terminal to determine the response of the output.
2 13	R01 R02	–	This is a terminal to determine the response of the output.
3 12	VIN1 VIN2	I	Analog signal input terminal
4 8	GND	–	Ground
5	DO	O	Digital ooutput terminal
6	$\overline{\text{CS}}$	I	Chip select terminal DO terminal is enable when this terminal is "L'.
9	$\overline{\text{SCK}}$	I	Clock signal input The accuracy of the A/D conversion depends on this clock speed.
10 11	VCC	–	+5V

3. Block Diagram


R02
13
CR2
14
VCC
11
VCC
10
A/D Converter
VIN2
12
Rectifier
Root means
square AMP
VIN2
3
Latch
Encoder
Latch
Register
Shift
5
DO
Internal clock
Control circuit
2
R01
1
CR1
4
GND
6
$\overline{\text{CS}}$
9
$\overline{\text{SCK}}$
8
GND

■ TA8409S (IC451~454) : DC motor driver

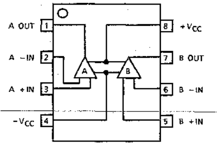

IN2
VCC
OUT2
NC
GND
VS
OUT1
Vref
IN1
1
2
3
4
5
6
7
8
9

Function

Input		Output		Mode
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	OPEN
0	1	L	H	CLOSE
1	1	L	L	BRAKE

∞ : High impedance

■ VC4580LD (IC111,112) : Dual OP Amp.


A OUT
1
A −IN
2
A +IN
3
−Vcc
4
8
+Vcc
7
B OUT
6
B −IN
5
B +IN
A
B

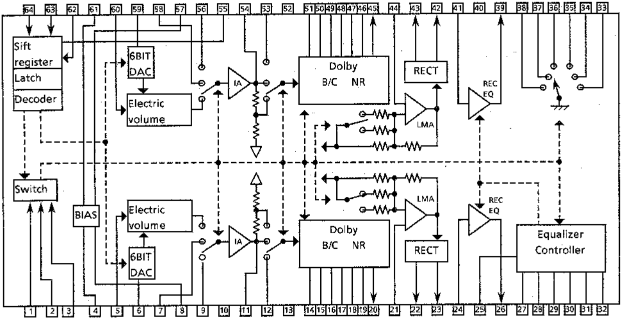
■ HA12155NT (IC201) : Signal processor

Function

REC Equalizer
Dolby B/C
Electric Volume
Level meter

Description

1) REC level automatic control
2) The signal which is not decoded is output from REC OUT during Playback.
3) Standard/high speed, Normal/CrO2/METAL switchng
4) NR-ON/OFF,Dolby B/C,switching

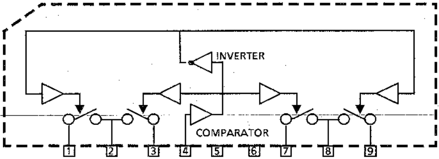

Sift register
Latch
Decoder
Switch
BIAS
6BIT DAC
Electric volume
IA
Dolby B/C NR
RECT
LMA
REC EQ
Equalizer Controller
64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

PinNO	Function	PinNO	Function	PinNO	Function
1	NR ON/OFF input	10	Connected to +5V	25	EQ Constant current input
2	NR B/C switching	14,51	Playback signal output	26,39	Recording signal input
3	Not used	15,50	Spectram slanting AMP	27~32	EQ parameter current input
4	Power supply	16,49	Spectram slanting AMP	33~38	EQ parameter select
5,60	Recording signal input	20,45	Output for REC equalizer	40,61	Ground
6,59	Capacitors are connected	21,44	Not used	55	Digital ground
7,58	Deck A playback signal input	22,43	Conected to capacitor	57	Current input for Dolby NR
8	Not used	23,42	Music scan output	62	Strobe signal input
9,56	Deck B playback signal input	24,41	Equalizer input	63	Clock input
11,12,13 54,53,52	Not used	17,18,19 48,47,46	Not used	64	Data input

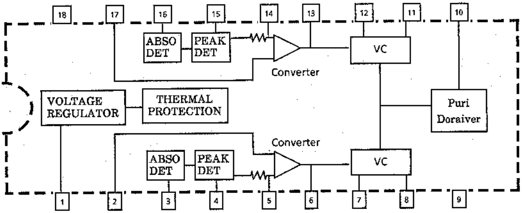
■ μPC1330 HA (IC101) : HEAD SWITCH

Function

	4pin
PB	L
REC	H


INVERTER
COMPARATOR
1
2
3
4
5
6
7
8
9

■ μPC1297CA (IC301) : Dolby HX PRO System IC


18
17
16
15
14
13
12
11
10
ABSO DET
PEAK DET
Converter
VC
VOLTAGE REGULATOR
THERMAL PROTECTION
Puri Doraiver
Converter
ABSO DET
PEAK DET
VC
1
2
3
4
5
6
7
8
9

Disassembly Procedures

■ Top cover removal

1. Remove the screws fastening both sides of the Top cover and rear side.
2. Remove the Top cover spreding both sides and lifting the rear up.

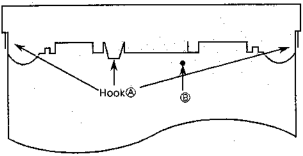


Figure 1 Bottom view of the front panel

■ Front panel block removal

1. Remove the Top cover.
2. Disconnect the connectors P101,P102,J401,J402,J403.
3. Remove the screw Ⓑ on the bottom .
4. Release the 3 hooks Ⓐ and remove the front panel block.

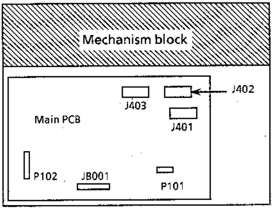


Figure 2 Top view

■ Cassette mechanism block removal

1. Remove the front panel block.
2. Disconnect the connectors J408,J409.
3. Remove the 8 blue colored screws Ⓒ Ⓓ fixing the mechanism.
4. Push the eject button and remove the cassette mechanism block.

NOTE

The cassette mechanism is grounded through the bottom cover, so when checking the operations with the bottom cover removed (especially when checking the signal system), be sure to ground the chassis by using an alligator clip or other suitable gadget. Also, this mechanism is designed for pack sensing, remember that it can not be operated without any tape.

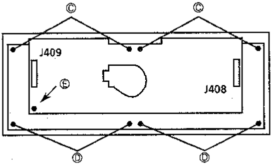


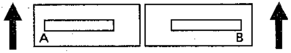
Figure 3 Rear view of the front panel block

■ Cassette holder removal

1. Remove the cassette mechanism from the front panel block.
2. Remove the dampers.
3. Remove the holder spring from the holder bracket.
4. Remove the cassette holder from the holder bracket.

■ System controller PCB removal

1. Remove the front panel block.
2. Remove the screw Ⓔ. and remove the PCB .



■ Cassette lid removal

1. Open the doors and slide them in the direction of the arrows.

Figure 4 Cassette lids

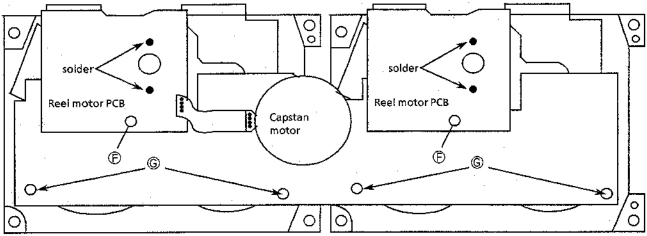


Figure 5 Rear view of the cassette mechanism

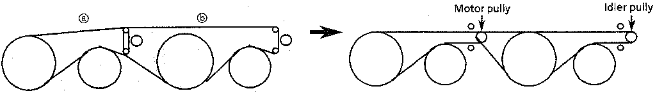


Figure 6 How to put the belts

Flywheel removal

1. Remove the mechanism block.
2. Remove the system controller PCB.
3. Remove the reel motor.PCBs.
4. Remove the 4 screws fixing the bracket on which capstan motor is installed.
5. Remove the bracket and the belts.
6. Release the flywheel from the washer .

INSTALL

Install the flywheel and the belts to the mechanism as shown in figure 6. (When putting the belts, put the belt ⓐ first.)

At last, install the bracket with the capstan motor and put the belts on the pullies.

CAM switch PCB removal

1. Remove the flywheels.
2. Release the hook fixing the PCB and remove the PCB.

(When installing the CAM switch gears, assemble the PCB so that part Ⓗ meets part Ⓘ.figure7)

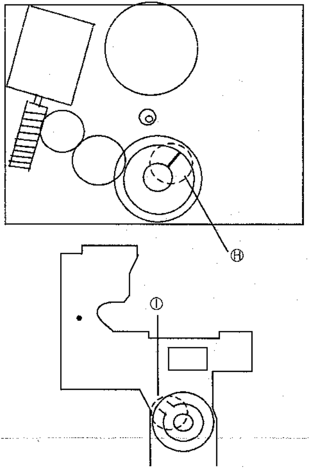


Figure 7 Gear position

Head assembly removal

1. Remove the cassette mechanism.
2. Unsolder the flexible wire on the relay PCB, and remove the 2 screws Ⓚ fixing the head assembly(Figure 10).

Notice for installing the head assembly
The direction of the head for forward or reverse mode is switched by the cam gear.
The point of the rib for the head assembly installation differs with the head direction.Figure 8 shows the relation of the gears.

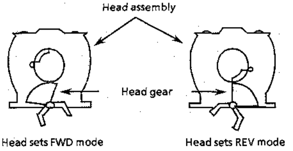

Head assembly
Head gear
Head sets FWD mode
Head sets REV mode

Figure 8 Bottom view of the head assembly

Pinch roller arm assembly removal (FWD / REV)

1. Release the pinch roller return spring from the hook (Figure 10) .
2. Remove the hook fixing the pinch roller assembly, and remove the pinch roller assembly (Figure 9).

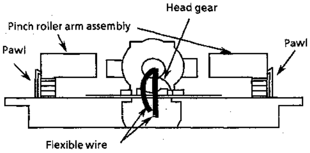

Head gear
Pinch roller arm assembly
Pawl
Pawl
Flexible wire

Figure 9 Bottom view of the cassette mechanism

Reel motor PCB removal

1. Remove the mechanism block.
2. Remove the system controller PCB.
3. Remove the screw Ⓕfixing the reel motor PCB (Figure 5).
4. Unsolder the reel motor.
5. Remove the PCB.

Reel motor removal

1. Remove the mechanism block.
2. Remove the reel motor PCB.
3. Remove the FR arm assembly (Figure 10) .
4. Remove the screws Ⓙ fixing the motor.
5. Release the pawl fixing the motor and remove the motor.

Capstan motor removal

1. Remove the mechanism block.
2. Remove the system controller PCB.
3. Remove the reel motor PCB.
4. Remove the 4 screws Ⓖ fixing the bracket (Figure 5).
5. Release the pawl fixing the bracket and remove the capstan motor with the bracket.
6. Remove the 2 screws fixing the motor on the bracket and remove the motor from the bracket.

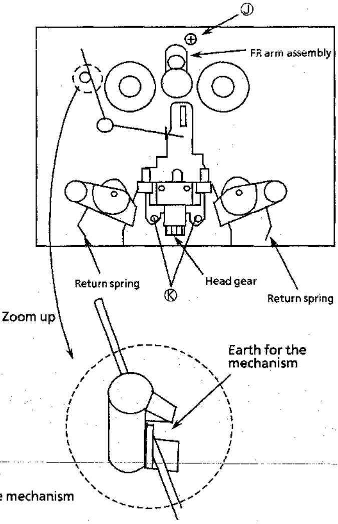

Ⓙ
FR arm assembly
Return spring
Head gear
Ⓚ
Return spring
Zoom up
Earth for the mechanism

Figure 10 Front view of the cassette mechanism

Adjustment Procedures(Cassette Deck)

1. Measuring instruments

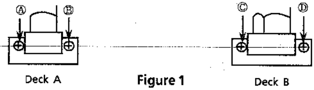
Audio frequency signal generator (0dbs output at the 600 ohm output terminal from 50Hz to 20KHz)
Electronic voltmeter
Frequency counter
Wow & Flutter meter
Distortion Meter with band pass filter
Attenuator (600 ohm impedance)
A resistor with 600Ω

Standard Tape **0dBs = 0.775V**

Tape No.	Frequency	Level (Wow & Fkutter)	Purpose
VTT-703L	10kHz	−10dBs	Head azimuth , Frequency Response
VTT-712	3000Hz	0dBs 0.025%WRMS	Tape Speed , Wow & Flutter
VTT-724	1kHz	−4dBs	Standard Level
TMT-6447	−	−	Blunk Skip
TMT-6247 , TMT-6237	−	−	Music Scan
TMT-7046	−	−	Recording standard Normal : UR
AC-712	−	−	Recording standard METAL : MA
AC-513	−	−	Recording standard CrO_2 : SA
TW-2111, TW-2121	−	−	Forward / reverse play torque measuring
TW-2231	−	−	Feed forward / rewind torque measuring
C-120 Tape	−	−	Comfirming the tape running

2. Adjustment and repairing the mechanism

Item	Adjustment method	Standard value	Remarks
Head azimuth	Deck A 1. Connect an electronic voltmeter to the VCR REC OUT to playback VTT-703L. 2. Adjust screw Ⓐ so that the indication of the voltmeter becomes maximum when PLAY (▶) is pressed. 3. Adjust screw Ⓑ so that the indication of the voltmeter becomes maximum when PLAY (◀) is pressed. Deck B 4. Adjust screw Ⓒ so that the indication of the voltmeter becomes maximum when PLAY (▶) is pressed. 5. Adjust screw Ⓓ so that the indication of the voltmeter becomes maximum when PLAY (◀) is pressed. 6. After making the adjustment,apply screw lock to prevent screws Ⓐ , Ⓑ , Ⓒ and Ⓓ coming loose .	Maximum	1. **Refer to figure 1.** 2. When the specified characteristic cannot be obtained because of head wear, excessive magnetization, etc., replace the head assembly and adjust the head azimuth. Also, perform the electric adjustment. 3. When there is the difference of more than 3 ~ 4 dB between left and right output levels, replace the head assembly to avoid complaints.
Playback torque	1. Measure the torque in the playback mode by the torqu meter.	26 ~ 67 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Fast forward torque	1. Measure the torque in the fast forward mode by the torqu meter.	80 ~ 200 g-cm	When the standard torque cannot be obtained,replace the FR arm assembly or motor.
Rewind torque	1. Measure the torque in the rewind mode by the torqu meter.	80~ 200 g-cm	When the standard torque cannot be obtained, replace the FR arm assembly or motor.
Wow & flutter	1. Connect the wow & flutter meter to the DOLBY TP(figure 3) and play back VTT-712 . 2. Its reading should be within 0.2% (WTD).	Less than 0.2%	As a complaint may occur if the wow & flutter fluctuates by 0.1% even though it is allowed in the standard, repairing is required.



Deck A Deck B

Figure 1

3. Electrical Adjustments (Make the following adjustments after adjusting the head azimuth.)

In principle, the adjustments should be made in the following sequence.
Set the NR switch to OFF and the BEAT CUT switch to "1".
Adjustments marked with an asterisk (*) should always be made after the head is replaced **0dBs = 0.775V.**

	Item	Adjustment Method	Adjustment Location	Standard Value	Remarks
1	Tape Speed	1. Connect a frequency counter to the VCR REC OUT and play back VTT-712. 2. Normal speed Adjustment 1) Mechanism B play back deck B to adjust the semi-fixed resistor VR451on ENJ-067-1. 3. Hign-speed adjustment 1) Mechanism A play back deck A and adjust the semi-fixed resistor VR452on ENJ-067-2.	VR451 VR452	3,000 Hz ±10Hz 6,000 Hz ±20Hz	1) Adjust the normal speed first, and perform the hign speed adjustment
* 2	Standard level (Playback Level)	1. Connect an electronic voltmeter to the DOLBY TP (figure 3). Play back VTT-724 (1 kHz : −4dBs) to adjust the semi-fixed resistors.	**Deck A** L: VR111 R: VR112 **Deck B** L: VR141 R: VR142	−5.5dBs (411mV) ±1dB	1) The playback level varies when the head is replaced so should be adjusted. Use an electronic voltmeter with an impedance of 100 kΩ or more.
* 3	Playback Frequency Response	1. Connect an electronic voltmeter to the DOLBY TP (figure 3). 2. Play VTT-703L (10kHz : −10dBs) and adjust semi-fixed resistors to obtain the standard values.	**Deck A** L: VR113 R: VR114 **Deck B** L: VR143 R: VR144	−11.5dBs (206mV) ±3dB	—
* 4	Adjustment HX PRO	1. Connect an electronic voltmeter to the R307(L), R308(R) at either end, and record the no signal Metal tape . 2. Adjust to the liast Volues.	L301(L) L302(R)		—
* 5	Recording Bias Frequency	1. Connect a frequency counter to the BIAS TP(figure 3), and perform a recording to adjust bias frequency.	L351	100 kHz ±5 kHz	Set the BEAT CUT SWITCH to "1".
* 6	Record / Play Frequency Response (Bias current)	1. Supply 1kHz and 12.5kHz with 30mV signals to VCR terminals respectively to record them. 2. Connect an electronic voltmeter to the DOLBY TP (figure 3) to confirm the recorded values. 3. If the values are not satisfied, adjust the semi-fixed resistors and record the signals again to confirm the values.	L : VR301 R : VR302	0±3 dB for 12.5 kHz with 1 kHz as the standard.	**Refer to figure 2 below.** 1) The recording and playback frequency response of a cassette deck are adjusted by adjusting the bias current. 2) Perform the adjustment with normal tape and confirm that the values are within the range for CrO_2 tape.

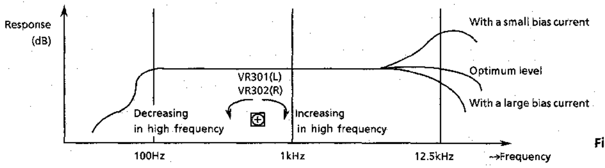
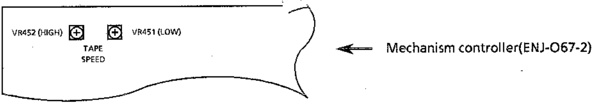


Figure 2

	Item	Adjustment Method	Adjustment Location	Standard Value	Remarks
7	Record / Playback Sensitivity	1. Input a 1 kHz (−8.2dBs: 300mV) signal to VIDEO/AUX terminals and record it on the left and right channels . 2. Connect an electronic voltmeter to the DOLBY TP (figure 3) to confirm the recorded values. 3. If the values are not satisfied, adjust the semi-fixed resistors and record the signals again to confirm the values.	L : VR185 R : VR186	−5.5dBs (411mV)	Adjust with normal tape and make sure that the left/right level difference is 1.0dB or less
8	Erase ratio check	1. Record a music source using the CrO_2 tape. 2. Rewind and erase the recorded section. 3. Comfirm nothing can be heard.	–	–	–
9	Auto-stop check	1. Make sure to operate AUTO STOP at the end of tape running and not to operate on the way of the playing.	–	–	–
10	Music Scan	1. Make sure not to work the music scanning operation at the start of tape wind using TMT-6237. 2. Make sure to work the music scanning operation at the end of tape wind using TMT-6247.	–	–	–
11	Blunk Skip	1. Make sure to work the blunk skip operation at the tape wind using TMT-6247.	–	–	–


VR452 (HIGH)
VR451 (LOW)
TAPE SPEED
Mechanism controller(ENJ-O67-2)

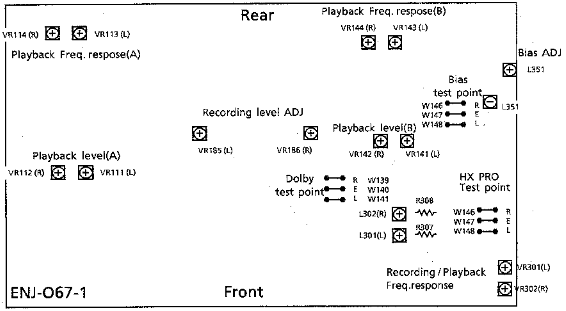

Rear
VR114 (R)
VR113 (L)
Playback Freq. respose(A)
Playback Freq. respose(B)
VR144 (R)
VR143 (L)
Bias ADJ
L351
Bias test point
W146
W147
W148
R
E
L
L351
Recording level ADJ
VR185 (L)
VR186 (R)
Playback level(B)
VR142 (R)
VR141 (L)
Playback level(A)
VR112 (R)
VR111 (L)
Dolby test point
R
E
L
W139
W140
W141
R308
L302(R)
R307
L301(L)
HX PRO Test point
W146
W147
W148
R
E
L
Recording / Playback Freq.response
VR301(L)
VR302(R)
ENJ-O67-1
Front

Figure 3

JVC

VICTOR COMPANY OF JAPAN, LIMITED
AUDIO DIVISION, YAMATO PLANT, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN

(No. 20437)

Printed in Japan
9306(O)

PARTS LIST

Note : All printed circuit boards and its assemblies are not available as service parts.

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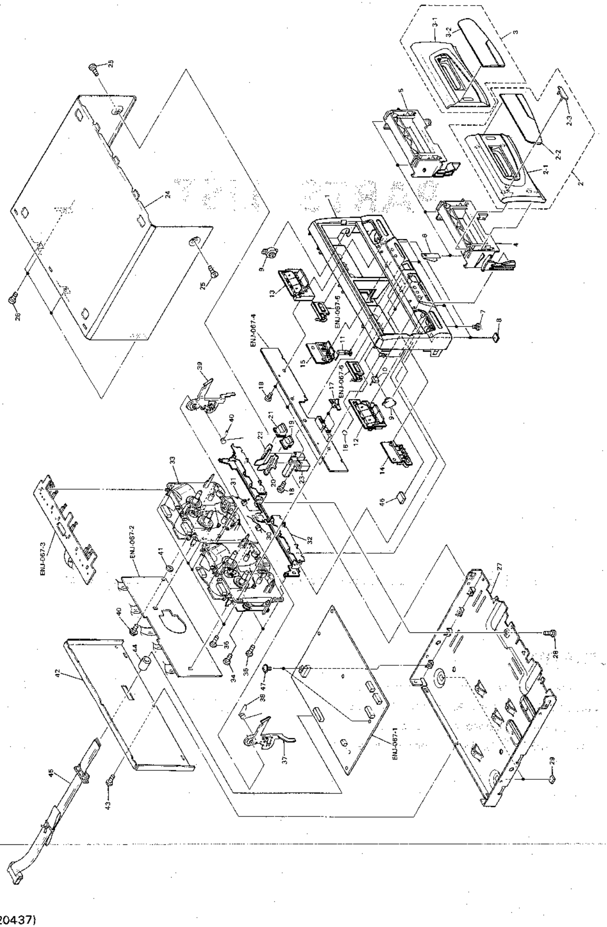
  ■ENJ-067 ☐ Cassette Deck PC Board Ass'y 2-8

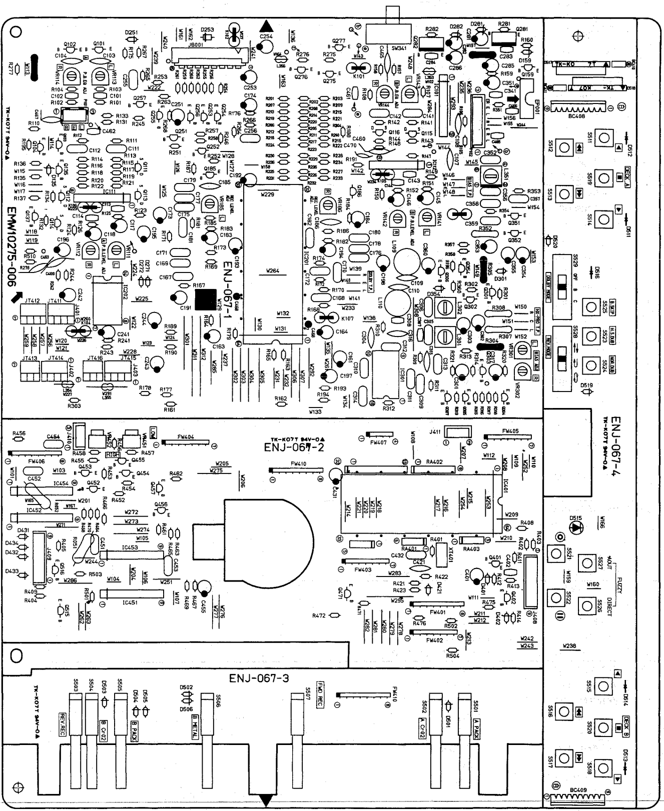
General Exploded View and Parts List


25
24
25
26
3-1
3-2
3
5
2-3
2-2
2-1
2
1
4
6
7
8
9
13
ENJ-067-5
ENJ-067-4
11
15
10
ENJ-067-6
17
18
39
40
21
19
22
16
12
9
14
20
18
23
33
31
46
30
32
ENJ-067-3
ENJ-067-2
41
27
40
36
44
28
42
34
35
47
38
37
ENJ-067-1
29
45
43

Printed Circuit Board Ass'y and Parts List

■ENJ-067☐Cassette Deck PC Board Ass'y

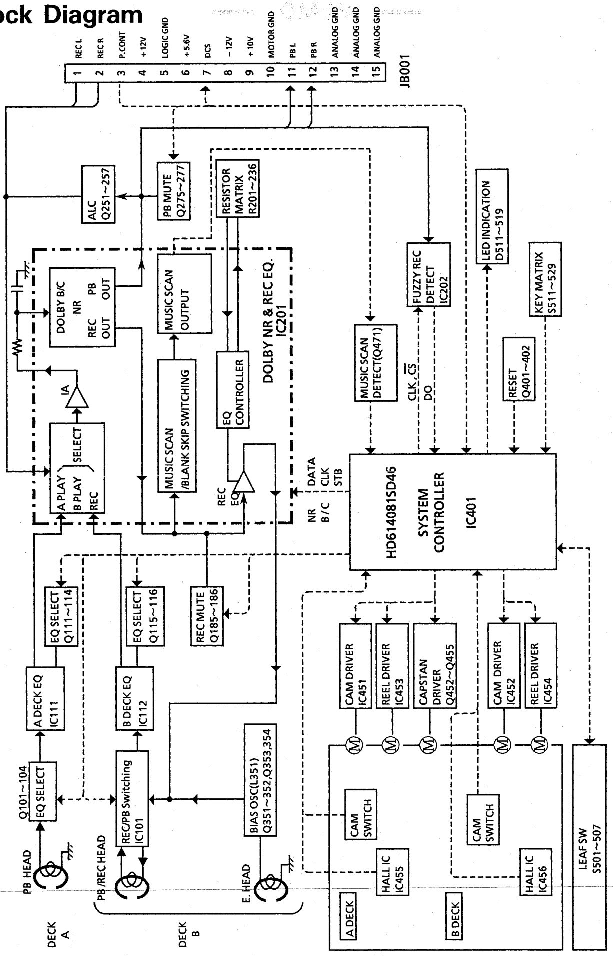
Note : ENJ-067☐ varies according to the areas employed. See note (1) when placing an order.


ENJ-067-1
ENJ-067-2
ENJ-067-3
ENJ-067-4
EMW10275-006
TK-K07T 94V-0A
JB001
SW341
IC111
IC201
IC202
IC301
IC401
IC451
IC452
IC453
IC454
BC408
BC409
DOLBY MODE
REV MODE
DECK A
DECK B
B.SKIP
H.S.DUB
NOR.DUB
FUZZY
DIRECT
REV.REC
B Cr02
B PACK
B METAL
FWD REC
A Cr02
A PACK
LOW
RIGH
DOLBY T.P.
BIAS T.P.
FW401
FW402
FW403
FW404
FW405
FW406
FW407
FW410
X401
J401
J402
J403
J409
J410
J411

■ Parts List (Cassette Mechanism)

Item	Part Number	Part Name	Q'ty	Description	Areas
1	VKL6954-007	EJECT SAFETY LEVER	1	A MECHANISM	
2	VKS3551-00C	HEAD BLOCK ASSY	1	B MECHANISM	
3	VKL6943-005	EJECT SAFETY LEVER	1	B MECHANISM	
4	VKB3001-050	CAPSTAN BELT	1	A MECHANISM	
5	VKS5321-00D	REEL ASSY	2	RIGHT	
6	SDST2004Z	SCREW	4	FOR HEAD MOUNT ASSY	
7	VKL6942-00E	HEAD BASE ASSY	2		
8	VKW4994-001	HEAD SPRING	2		
9	VKP4221-00C	PINCH ROLLER ASSY	2	LEFT	
10	VKW4982-001	TORSION SPRING	2	LEFT	
11	VKW4933-005	TORSION SPRING	2	LEFT	
12	VKS1112-30E	CHASSIS BASE ASSY	2		
13	VKW4930-002	RETURN SPRING	2		
14	VKS3480-005	REEL ASSY	2	LEFT	
15	VKW4928-003	B.T SPRING	4	FOR REEL ASSY	
16	VKL6940-002	PINCH ROLLER LEVER	2	LEFT	
17	VKS2209-006	CONTROLLER CAM	2		
18	VKF3186-00C	FLYWHEEL ASSY	2	LEFT	
19	VKB3001-048	CAPSTAN BELT	1	B MECHANISM	
20	VKF3184-00C	FLYWHEEL ASSY	2	RIGHT	
21	SDSF2608Z	SCREW	2	PC BOARD - FM BRACKET	
22	MMN-6F4RA38	DC MOTOR	2	REEL	
23	VKS5331-002	GEAR (6)	2		
24	VKS5330-004	GEAR (5)	2		
25	MXN-13FB12F	DC MOTOR	2	CAM	
26	VKS5329-002	GEAR (4)	2		
27	SDSP2605Z	SCREW	2	CHASSIS BASE - D.C. MOTOR	
28	VKL6939-002	PINCH ROLLER LEVER	2	RIGHT	
29	VKS5325-00F	FR ARM ASSY	2		
30	VKS5328-002	REEL MOTOR GEAR	2		
31	VKS5327-003	THRUST PALTE	2		
32	VKY4628-002	PACK SPRING	2		
33	VKP4219-00C	PINCH ROLLER ASSY	2	RIGHT	
34	VKW4981-001	TORSION SPRING	2	RIGHT	
35	VKW4932-005	TORSION SPRING	2	RIGHT	
36	VKZ4629-003	SCREW	4		
37	VMW4816-001	PRINTED BOARD	2		
38	VKS3550-00C	HEAD MOUNT ASSY	1	A MECHANISM	
39	VMW2345-002	PRINTED BOARD	2		
40	VKS3485-002	HEAD BLOCK GEAR	2		
41	VMC0249-R08	CONNECTOR	1	B MECHANISM	
42	VMC0249-R07	CONNECTOR	2		
43	DN6851A	HALL IC	2		
44	VKS3487-002	IC HALL	2		
45	VKS3587-00A	CAM SWITCH ASSY	2		
46	WDL163525-4	WASHER	1		
47	VKR4631-002	IDLER PULLEY	1		
48	VKM3419-00E	FM BRACKET	1		
49	SDSF2605Z	SCREW	4	CHASSIS BASE - BRACKET	
50	MMI-6H2LWSK	MOTOR	1	CAPSTAN	
51	VKR4632-003	MOTOR PULLEY	1		
52	SPSP2603Z	SCREW	2		
53	VDM107P-040	HEAD WIRE	1	B MECHANISM	
54	VDM103P-040	HEAD WIRE	1	A MECHANISM	
55	VMC0249-R04	CONNECTOR	1	A MECHANISM	

Block Diagram


1 REC L
2 REC R
3 P.CONT
4 +12V
5 LOGIC GND
6 +5.6V
7 DCS
8 −12V
9 +10V
10 MOTOR GND
11 PB L
12 PB R
13 ANALOG GND
14 ANALOG GND
15 ANALOG GND
JB001
ALC
Q251~257
PB MUTE
Q275~277
RESISTOR
MATRIX
R201~236
DOLBY B/C
NR
REC
OUT
PB
OUT
MUSIC SCAN
OUTPUT
DOLBY NR & REC EQ.
IC201
IA
A PLAY
B PLAY
REC
SELECT
MUSIC SCAN
/BLANK SKIP SWITCHING
EQ
CONTROLLER
REC
EQ
DATA
CLK
STB
NR
B/C
FUZZY REC
DETECT
IC202
LED INDICATION
D511~519
KEY MATRIX
S511~529
MUSIC SCAN
DETECT(Q471)
CLK, CS
DO
RESET
Q401~402
HD614081SD46
SYSTEM
CONTROLLER
IC401
EQ SELECT
Q111~114
EQ SELECT
Q115~116
REC MUTE
Q185~186
A DECK EQ
IC111
B DECK EQ
IC112
CAM DRIVER
IC451
REEL DRIVER
IC453
CAPSTAN
DRIVER
Q452~Q455
CAM DRIVER
IC452
REEL DRIVER
IC454
M
M
M
M
M
Q101~104
EQ SELECT
REC/PB Switching
IC101
BIAS OSC(L351)
Q351~352,Q353,354
CAM
SWITCH
CAM
SWITCH
HALL IC
IC455
HALL IC
IC456
LEAF SW
S501~507
PB HEAD
PB/REC HEAD
E. HEAD
A DECK
B DECK
DECK
A
DECK
B

— MEMO —

OTHERS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	S502	ESB1100-007	LEAF SWITCH (A Cro2)	
	S503	ESB1100-007	LEAF SWITCH (REV REC)	
	S504	ESB1100-007	LEAF SWITCH (B Cro2)	
	S505	ESB1100-007	LEAF SWITCH (B PARK)	
	S506	ESB1100-007	LEAF SWITCH (B METAL)	
	S507	ESB1100-007	LEAF SWITCH(■ FWD REC)	
	S511	ESP0001-023M	TACT SWITCH(A ◀)	
	S512	ESP0001-023M	TACT SWITCH(A ◀◀)	
	S513	ESP0001-023M	TACT SWITCH(A ▶▶)	
	S514	ESP0001-023M	TACT SWITCH(A ▶)	
	S515	ESP0001-023M	TACT SWITCH(B ◀)	
	S516	ESP0001-023M	TACT SWITCH(B ◀◀)	
	S517	ESP0001-023M	TACT SWITCH(B ▶▶)	
	S518	ESP0001-023M	TACT SWITCH(B ▶)	
	S519	ESP0001-023M	TACT SWITCH(A STOP)	
	S520	ESP0001-023M	TACT SWITCH(B STOP)	
	S521	ESP0001-023M	TACT SWITCH(B REC/REC MUTE)	
	S522	ESP0001-023M	TACT SWITCH(B PAUSE)	
	S523	ESP0001-023M	TACT SWITCH(A ▶▶ B)	
	S524	ESP0001-023M	TACT SWITCH(A ▶B)	
	S525	ESP0001-023M	TACT SWITCH(B SKIP)	
	S526	ESP0001-023M	TACT SWITCH(FUZZY DIRECT)	
	S527	ESP0001-023M	TACT SWITCH(FUZZY AUTO)	
	S528	QSS4001-E01M	SLIDE SWITCH(REV MODE)	
	S529	QSS4001-E01M	SLIDE SWITCH(DOLBY MODE)	
	BC408	EWS269-A916	SOCKET WIRE(9PIN)	
	BC409	EWS269-A916	SOCKET WIRE(9PIN)	
	BC410	EWS243-054	SOCKET WIRE(2PIN)	
	BC411	EWS243-054	SOCKET WIRE(2PIN)	
	EP001	E70859-001	EARTH PLATE	
	FW401	EWR38B-16LST	FLAT WIRE(8PIN)	
	FW402	EWR37B-10LST	FLAT WIRE(7PIN)	
	FW403	EWR37B-10LST	FLAT WIRE(7PIN)	
	FW404	EWR37B-10LST	FLAT WIRE(7PIN)	
	FW405	EWR37B-10LST	FLAT WIRE(7PIN)	
	FW406	EWR38B-08LST	FLAT WIRE(8PIN)	
	FW407	EWR34B-08LST	FLAT WIRE(4PIN)	
	FW410	EWR38B-16SST	FLAT WIRE(8PIN)	
	JB001	EMV7141-015	CONNECTOR (15PIN)	
	JT411	EMV7122-004	CONNECTOR (4PIN)	
	JT412	EMV7122-004	CONNECTOR (4PIN)	
	JT413	EMV7122-103	CONNECTOR (3PIN)	
	JT414	EMV7122-004	CONNECTOR (4PIN)	
	JT415	EMV7122-004	CONNECTOR (4PIN)	
	JT416	EMV7122-103	CONNECTOR (3PIN)	
	SW341	QSS6A12-E01	SLIDE SWITCH(BEAT CUT SWITCH)	
	XT401	ECX0004-194KM	RESONATOR	

⚠ SAFETY PARTS

RESISTORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R217	QRD167J-363	36K 1/6W CARBON	
	R218	QRD167J-123	12K 1/6W CARBON	
	R219	QRD167J-104	100K 1/6W CARBON	
	R220	QRD167J-104	100K 1/6W CARBON	
	R221	QRD167J-433	43K 1/6W CARBON	
	R222	QRD167J-913	91K 1/6W CARBON	
	R223	QRD167J-683	68K 1/6W CARBON	
	R224	QRD167J-243	24K 1/6W CARBON	
	R225	QRD167J-104	100K 1/6W CARBON	
	R226	QRD167J-104	100K 1/6W CARBON	
	R227	QRD167J-303	30K 1/6W CARBON	
	R228	QRD167J-513	51K 1/6W CARBON	
	R229	QRD167J-513	51K 1/6W CARBON	
	R230	QRD167J-433	43K 1/6W CARBON	
	R231	QRD167J-104	100K 1/6W CARBON	
	R232	QRD167J-683	68K 1/6W CARBON	
	R233	QRD167J-513	51K 1/6W CARBON	
	R234	QRD167J-273	27K 1/6W CARBON	
	R235	QRD167J-333	33K 1/6W CARBON	
	R236	QRD167J-303	30K 1/6W CARBON	
	R241	QRD167J-473	47K 1/6W CARBON	
	R242	QRD167J-473	47K 1/6W CARBON	
	R243	QRD167J-103	10K 1/6W CARBON	
	R244	QRD167J-103	10K 1/6W CARBON	
	R245	QRD167J-132	1.3K 1/6W CARBON	
	R246	QRD167J-132	1.3K 1/6W CARBON	
	R251	QRD167J-392	3.9K 1/6W CARBON	
	R252	QRD167J-392	3.9K 1/6W CARBON	
	R253	QRD167J-752	7.5K 1/6W CARBON	
	R254	QRD167J-752	7.5K 1/6W CARBON	
	R255	QRD167J-561	560 1/6W CARBON	
	R256	QRD167J-561	560 1/6W CARBON	
	R257	QRD167J-223	22K 1/6W CARBON	
	R258	QRD167J-223	22K 1/6W CARBON	
	R259	QRD167J-332	3.3K 1/6W CARBON	
	R260	QRD167J-332	3.3K 1/6W CARBON	
	R261	QRD167J-684	680K 1/6W CARBON	
	R262	QRD167J-684	680K 1/6W CARBON	
	R263	QRD167J-393	39K 1/6W CARBON	
	R264	QRD167J-393	39K 1/6W CARBON	
	R265	QRD167J-223	22K 1/6W CARBON	
	R266	QRD167J-223	22K 1/6W CARBON	
	R267	QRD167J-103	10K 1/6W CARBON	
	R268	QRD167J-105	1M 1/6W CARBON	
	R275	QRD167J-103	10K 1/6W CARBON	
	R276	QRD167J-103	10K 1/6W CARBON	
	R277	QRD167J-102	1K 1/6W CARBON	
	R278	QRD167J-471	470 1/6W CARBON	
	R281	QRD167J-432	4.3K 1/6W CARBON	
	R282	QRD167J-432	4.3K 1/6W CARBON	
	R301	QRD167J-103	10K 1/6W CARBON	
	R302	QRD167J-222	2.2K 1/6W CARBON	
	R303	QRD167J-102	1K 1/6W CARBON	
⚠	R304	QRZ0077-100	10 1/4W FUSIBLE	
⚠	R305	QRZ0077-100	10 1/4W FUSIBLE	
	R307	QRD148J-100	10 1/4W CARBON	
	R308	QRD148J-100	10 1/4W CARBON	
	R309	QRD167J-154	150K 1/6W CARBON	
	R310	QRD167J-154	150K 1/6W CARBON	
	R311	QRD167J-183	18K 1/6W CARBON	
	R312	QRD167J-183	18K 1/6W CARBON	
	R313	QRD167J-392	3.9K 1/6W CARBON	
	R314	QRD167J-103	10K 1/6W CARBON	
	R315	QRD167J-622	6.2K 1/6W CARBON	
	R316	QRD167J-472	4.7K 1/6W CARBON	
	R317	QRD167J-682	6.8K 1/6W CARBON	
	R318	QRD167J-912	9.1K 1/6W CARBON	
	R319	QRD167J-103	10K 1/6W CARBON	
	R320	QRD167J-682	6.8K 1/6W CARBON	
	R321	QRD167J-103	10K 1/6W CARBON	
	R351	QRD167J-181	180 1/6W CARBON	
	R352	QRD148J-6R8	6.8 1/4W CARBON	
	R353	QRD167J-563	56K 1/6W CARBON	
	R354	QRD167J-563	56K 1/6W CARBON	
	R357	QRD167J-271	270 1/6W CARBON	
	R358	QRD167J-331	330 1/6W CARBON	
	R360	QRD167J-332	3.3K 1/6W CARBON	
	R401	QRD167J-105	1M 1/6W CARBON	
	R402	QRD167J-271	270 1/6W CARBON	
	R403	QRD167J-271	270 1/6W CARBON	
	R404	QRD161J-430YT	43 1/6W CARBON	
	R405	QRD167J-910	91 1/6W CARBON	
	R408	QRD167J-271	270 1/6W CARBON	
	R409	QRD167J-271	270 1/6W CARBON	
	R411	QRD167J-103	10K 1/6W CARBON	
	R412	QRD167J-223	22K 1/6W CARBON	
	R413	QRD167J-103	10K 1/6W CARBON	
	R414	QRD167J-102	1K 1/6W CARBON	
	R421	QRD167J-153	15K 1/6W CARBON	
	R422	QRD167J-151	150 1/6W CARBON	
	R423	QRD167J-103	10K 1/6W CARBON	
	R452	QRD167J-184	180K 1/6W CARBON	
	R453	QRD167J-224	220K 1/6W CARBON	
	R454	QRD167J-224	220K 1/6W CARBON	
	R455	QRD167J-224	220K 1/6W CARBON	

⚠ : SAFETY PARTS

RESISTORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R456	QRD167J-683	68K 1/6W CARBON	
	R457	QRD167J-153	15K 1/6W CARBON	
	R458	QRD167J-183	18K 1/6W CARBON	
	R461	QRD167J-682	6.8K 1/6W CARBON	
	R462	QRD167J-682	6.8K 1/6W CARBON	
	R463	QRD167J-123	12K 1/6W CARBON	
	R464	QRD167J-123	12K 1/6W CARBON	
	R465	QRD167J-563	56K 1/6W CARBON	
	R466	QRD167J-563	56K 1/6W CARBON	
	R467	QRD167J-163	16K 1/6W CARBON	
	R468	QRD167J-163	16K 1/6W CARBON	
	R469	QRD167J-183	18K 1/6W CARBON	
	R470	QRD167J-183	18K 1/6W CARBON	
	R471	QRD167J-103	10K 1/6W CARBON	
	R472	QRD167J-103	10K 1/6W CARBON	
	R475	QRD167J-103	10K 1/6W CARBON	
	R476	QRD167J-103	10K 1/6W CARBON	
	R501	QRD167J-221	220 1/6W CARBON	
	R502	QRD167J-221	220 1/6W CARBON	
	R503	QRD167J-391	390 1/6W CARBON	
	R504	QRD167J-391	390 1/6W CARBON	
	R510	QRD167J-333	33K 1/6W CARBON	
	RA401	QRB049J-103	10K 1/10W R.NETWORK	
	RA402	QRB089J-103	10K 1/10W R.NETWORK	
	RA403	QRB049J-103	10K 1/10W R.NETWORK	
	VR111	QVPA601-501A	500 VARIABLE	
	VR112	QVPA601-501A	500 VARIABLE	
	VR113	QVPA601-104A	100K VARIABLE	
	VR114	QVPA601-104A	100K VARIABLE	
	VR141	QVPA601-501A	500 VARIABLE	
	VR142	QVPA601-501A	500 VARIABLE	
	VR143	QVPA601-104A	100K VARIABLE	
	VR144	QVPA601-104A	100K VARIABLE	
	VR185	QVPA601-503A	50K VARIABLE	
	VR186	QVPA601-503A	50K VARIABLE	
	VR301	QVPA601-203A	20K VARIABLE	
	VR302	QVPA601-203A	20K VARIABLE	
	VR451	QVPA603-103A	10K VARIABLE	
	VR452	QVPA603-203A	20K VARIABLE	

⚠ : SAFETY PARTS

OTHERS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
		ME11656-03B	WIRE KIT	A
		ME11656-03B	WIRE KIT	BS
		ME11656-03B	WIRE KIT	EF
		ME11656-03B	WIRE KIT	EN
		E3400-431	SPACER	G
		ME11656-03C	WIRE KIT	G
		QXT6100-015	S.TUBE	G
		E3400-431	SPACER	GI
		ME11656-03C	WIRE KIT	GI
		QXT6100-015	S.TUBE	GI
		ME11656-03D	WIRE KIT	U
		ME11656-03D	WIRE KIT	US
		ME11656-03D	WIRE KIT	UT
	J408	EMV5109-009A	PLUG ASSY(9PIN)	
	J409	EMV5109-009A	PLUG ASSY(9PIN)	
	J410	EMV5133-003	PLUG ASSY(2PIN)	
	J411	EMV5133-003	PLUG ASSY(2PIN)	
	K101	ENZ8101-007	INDUCTOR I.M	G
	K101	ENZ8101-007	INDUCTOR I.M	GI
	K102	ENZ8101-007	INDUCTOR I.M	G
	K102	ENZ8101-007	INDUCTOR I.M	GI
	K103	ENZ8101-007	INDUCTOR I.M	G
	K103	ENZ8101-007	INDUCTOR I.M	GI
	K104	ENZ8101-007	INDUCTOR I.M	G
	K104	ENZ8101-007	INDUCTOR I.M	GI
	K105	ENZ8101-007	INDUCTOR I.M	G
	K105	ENZ8101-007	INDUCTOR I.M	GI
	K106	ENZ8101-007	INDUCTOR I.M	G
	K106	ENZ8101-007	INDUCTOR I.M	GI
	K107	ENZ8101-007	INDUCTOR I.M	G
	K107	ENZ8101-007	INDUCTOR I.M	GI
	L109	EQL2106-223	INDUCTOR	
	L110	EQL2106-223	INDUCTOR	
	L151	EQL2106-223	INDUCTOR	
	L152	EQL2106-223	INDUCTOR	
	L301	ENZ2500-001	STEP UP COIL	
	L302	ENZ2500-001	STEP UP COIL	
	L351	ENZ6002-011	OSC COIL	
	L353	EQL4004-101	INDUCTOR	G
	L353	EQL4004-101	INDUCTOR	GI
	L354	EQL4004-101	INDUCTOR	G
	L354	EQL4004-101	INDUCTOR	GI
	L355	EQL4004-101	INDUCTOR	G
	L355	EQL4004-101	INDUCTOR	GI
	L356	EQL4004-1R0	INDUCTOR	G
	L356	EQL4004-1R0	INDUCTOR	GI
	P101	QMV5011-003K	PLUG ASSY(3PIN)	
	P102	QMV5011-007K	PLUG ASSY(7PIN)	
	S501	ESB1100-007	LEAF SWITCH(A PARK)	

⚠ : SAFETY PARTS

CAPACITORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C193	QETB1HM-225	2.2MF 50V ELECTRO	
	C194	QETB1HM-225	2.2MF 50V ELECTRO	
	C195	QET41HM-105	1MF 50V ELECTRO	
	C196	QET41HM-105	1MF 50V ELECTRO	
	C197	QET41HM-105	1MF 50V ELECTRO	
	C198	QET41HM-105	1MF 50V ELECTRO	
	C241	QET41HM-475	4.7MF 50V ELECTRO	
	C242	QET41HM-475	4.7MF 50V ELECTRO	
	C243	QETB1HM-225	2.2MF 50V ELECTRO	
	C244	QETB1HM-225	2.2MF 50V ELECTRO	
	C251	QET41EM-106	10MF 25V ELECTRO	
	C253	QETB1HM-225	2.2MF 50V ELECTRO	
	C254	QETB1HM-225	2.2MF 50V ELECTRO	
	C255	QFVB1HJ-473N	0.047MF 50V T.FILM	
	C256	QFVB1HJ-473N	0.047MF 50V T.FILM	
	C281	QETB1HM-106	10MF 50V ELECTRO	
	C282	QETB1HM-106	10MF 50V ELECTRO	
	C283	QCVB1CM-103	0.01MF 16V CERAMIC	
	C284	QCVB1CM-103	0.01MF 16V CERAMIC	
	C285	QET41AM-476	47MF 10V ELECTRO	
	C286	QET41AM-476	47MF 10V ELECTRO	
	C301	QET41CM-476	47MF 16V ELECTRO	
	C302	QET41EM-106	10MF 25V ELECTRO	
	C303	QET41EM-106	10MF 25V ELECTRO	
	C304	QCS21HJ-100	10PF 50V CERAMIC	
	C305	QFP81HG-821	820PF 50V POLY	
	C306	QFP81HG-821	820PF 50V POLY	
	C307	QCBB1HK-101	100PF 50V CERAMIC	
	C308	QCBB1HK-101	100PF 50V CERAMIC	
	C309	QFV41HJ-333	0.033MF 50V T.FILM	
	C310	QFV41HJ-333	0.033MF 50V T.FILM	
	C311	QFVB1HJ-223N	0.022MF 50V T.FILM	
	C312	QFVB1HJ-223N	0.022MF 50V T.FILM	
	C313	QFVB1HJ-103N	0.01MF 50V T.FILM	
	C314	QFVB1HJ-103N	0.01MF 50V T.FILM	
	C315	QCF21HP-102	1000PF 50V CERAMIC	
	C316	QCF21HP-102	1000PF 50V CERAMIC	
	C317	QET41EM-106	10MF 25V ELECTRO	
	C341	QCBB1HK-471	470PF 50V CERAMIC	
	C351	QET41CM-226	22MF 16V ELECTRO	
	C352	QFP81HG-562	5600PF 50V POLY	
	C353	QET41EM-106	10MF 25V ELECTRO	
	C354	QET41EM-106	10MF 25V ELECTRO	
	C355	QET41HM-105	1MF 50V ELECTRO	
	C356	QFVB1HJ-153N	0.015MF 50V T.FILM	
	C357	QFN81HJ-222	2200PF 50V MYLAR	
	C358	QFN81HJ-222	2200PF 50V MYLAR	
	C359	QFN81HJ-682	6800PF 50V MYLAR	
	C360	QETB1HM-225	2.2MF 50V ELECTRO	
	C401	QET41CM-226	22MF 16V ELECTRO	
	C402	QCVB1CM-103	0.01MF 16V CERAMIC	
	C421	QCF11HP-473	0.047MF 50V CERAMIC	
	C431	QET41AM-476	47MF 10V ELECTRO	
	C432	QCZ0205-155	1.5MF 25V CERAMIC	
	C451	QFV81HJ-104	0.1MF 50V T.FILM	
	C452	QFV81HJ-104	0.1MF 50V T.FILM	
	C453	QFV81HJ-104	0.1MF 50V T.FILM	
	C454	QFV81HJ-104	0.1MF 50V T.FILM	
	C455	QET41CM-107	100MF 16V ELECTRO	
	C460	QCS21HJ-221	220PF 50V CERAMIC	G
	C460	QCS21HJ-221	220PF 50V CERAMIC	GI
	C461	QCBB1HK-221	220PF 50V CERAMIC	G
	C461	QCBB1HK-221	220PF 50V CERAMIC	GI
	C462	QCBB1HK-331	330PF 50V CERAMIC	G
	C462	QCBB1HK-331	330PF 50V CERAMIC	GI
	C463	QCS21HJ-221	220PF 50V CERAMIC	G
	C463	QCS21HJ-221	220PF 50V CERAMIC	GI
	C464	QCS21HJ-221	220PF 50V CERAMIC	G
	C464	QCS21HJ-221	220PF 50V CERAMIC	GI
	C465	QCBB1HK-221	220PF 50V CERAMIC	G
	C465	QCBB1HK-221	220PF 50V CERAMIC	GI
	C466	QCBB1HK-221	220PF 50V CERAMIC	G
	C466	QCBB1HK-221	220PF 50V CERAMIC	GI
	C467	QCS21HJ-331	330PF 50V CERAMIC	G
	C467	QCS21HJ-331	330PF 50V CERAMIC	GI
	C468	QCY41HK-102	1000PF 50V CERAMIC	G
	C468	QCY41HK-102	1000PF 50V CERAMIC	GI
	C469	QCS21HJ-221	220PF 50V CERAMIC	G
	C469	QCS21HJ-221	220PF 50V CERAMIC	GI
	C470	QCS21HJ-221	220PF 50V CERAMIC	G
	C470	QCS21HJ-221	220PF 50V CERAMIC	GI

⚠ : SAFETY PARTS

RESISTORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R101	QRD167J-224	220K 1/6W CARBON	
	R102	QRD167J-224	220K 1/6W CARBON	
	R103	QRD167J-512	5.1K 1/6W CARBON	
	R104	QRD167J-512	5.1K 1/6W CARBON	
	R105	QRD161J-100	10 1/6W CARBON	
	R106	QRD161J-100	10 1/6W CARBON	
	R107	QRD167J-512	5.1K 1/6W CARBON	
	R108	QRD167J-512	5.1K 1/6W CARBON	
	R110	QRD167J-223	22K 1/6W CARBON	
	R111	QRD167J-334	330K 1/6W CARBON	
	R112	QRD167J-334	330K 1/6W CARBON	
	R113	QRD167J-432	4.3K 1/6W CARBON	
	R114	QRD167J-432	4.3K 1/6W CARBON	
	R115	QRD161J-272	2.7K 1/6W CARBON	
	R116	QRD161J-272	2.7K 1/6W CARBON	
	R117	QRD161J-272	2.7K 1/6W CARBON	
	R118	QRD161J-272	2.7K 1/6W CARBON	
	R119	QRD167J-752	7.5K 1/6W CARBON	
	R120	QRD167J-752	7.5K 1/6W CARBON	
	R121	QRD167J-223	22K 1/6W CARBON	
	R122	QRD167J-223	22K 1/6W CARBON	
	R123	QRD167J-102	1K 1/6W CARBON	
	R124	QRD167J-102	1K 1/6W CARBON	
	R125	QRD167J-101	100 1/6W CARBON	
	R126	QRD167J-101	100 1/6W CARBON	
	R131	QRD167J-105	1M 1/6W CARBON	
	R132	QRD167J-105	1M 1/6W CARBON	
	R133	QRD167J-105	1M 1/6W CARBON	
	R134	QRD167J-105	1M 1/6W CARBON	
	R135	QRD167J-563	56K 1/6W CARBON	
	R136	QRD167J-472	4.7K 1/6W CARBON	
	R137	QRD167J-103	10K 1/6W CARBON	
	R141	QRD167J-334	330K 1/6W CARBON	
	R142	QRD167J-334	330K 1/6W CARBON	
	R143	QRD167J-682	6.8K 1/6W CARBON	
	R144	QRD167J-682	6.8K 1/6W CARBON	
	R147	QRD167J-822	8.2K 1/6W CARBON	
	R148	QRD167J-822	8.2K 1/6W CARBON	
	R149	QRD167J-102	1K 1/6W CARBON	
	R150	QRD167J-102	1K 1/6W CARBON	
	R151	QRD167J-101	100 1/6W CARBON	
	R152	QRD167J-101	100 1/6W CARBON	
	R157	QRD167J-105	1M 1/6W CARBON	
	R158	QRD167J-105	1M 1/6W CARBON	
	R159	QRD167J-563	56K 1/6W CARBON	
	R160	QRD167J-472	4.7K 1/6W CARBON	
	R161	QRD167J-223	22K 1/6W CARBON	
	R162	QRD167J-223	22K 1/6W CARBON	
	R163	QRD167J-223	22K 1/6W CARBON	
	R164	QRD167J-183	18K 1/6W CARBON	
	R165	QRD167J-103	10K 1/6W CARBON	
	R167	QRD167J-242	2.4K 1/6W CARBON	
	R168	QRD167J-242	2.4K 1/6W CARBON	
	R169	QRD167J-562	5.6K 1/6W CARBON	
	R170	QRD167J-562	5.6K 1/6W CARBON	
	R171	QRD167J-223	22K 1/6W CARBON	
	R172	QRD167J-223	22K 1/6W CARBON	
	R173	QRD167J-561	560 1/6W CARBON	
	R174	QRD167J-561	560 1/6W CARBON	
	R175	QRD167J-562	5.6K 1/6W CARBON	
	R176	QRD167J-562	5.6K 1/6W CARBON	
	R177	QRD167J-103	10K 1/6W CARBON	
	R178	QRD167J-103	10K 1/6W CARBON	
	R179	QRD167J-103	10K 1/6W CARBON	
	R181	QRD167J-202	2K 1/6W CARBON	
	R182	QRD167J-202	2K 1/6W CARBON	
	R183	QRD167J-104	100K 1/6W CARBON	
	R184	QRD167J-104	100K 1/6W CARBON	
	R185	QRD167J-333	33K 1/6W CARBON	
	R186	QRD167J-333	33K 1/6W CARBON	
	R187	QRD167J-103	10K 1/6W CARBON	
	R188	QRD167J-103	10K 1/6W CARBON	
	R189	QRD167J-202	2K 1/6W CARBON	
	R190	QRD167J-202	2K 1/6W CARBON	
	R191	QRD167J-243	24K 1/6W CARBON	
	R193	QRD167J-153	15K 1/6W CARBON	
	R194	QRD167J-153	15K 1/6W CARBON	
	R195	QRD167J-103	10K 1/6W CARBON	
	R196	QRD167J-103	10K 1/6W CARBON	
	R201	QRD167J-104	100K 1/6W CARBON	
	R202	QRD167J-823	82K 1/6W CARBON	
	R203	QRD167J-203	20K 1/6W CARBON	
	R204	QRD167J-823	82K 1/6W CARBON	
	R205	QRD167J-823	82K 1/6W CARBON	
	R206	QRD167J-133	13K 1/6W CARBON	
	R207	QRD167J-104	100K 1/6W CARBON	
	R208	QRD167J-823	82K 1/6W CARBON	
	R209	QRD167J-163	16K 1/6W CARBON	
	R210	QRD167J-513	51K 1/6W CARBON	
	R211	QRD167J-563	56K 1/6W CARBON	
	R212	QRD167J-133	13K 1/6W CARBON	
	R213	QRD167J-104	100K 1/6W CARBON	
	R214	QRD167J-683	68K 1/6W CARBON	
	R215	QRD167J-203	20K 1/6W CARBON	
	R216	QRD167J-223	22K 1/6W CARBON	

⚠ : SAFETY PARTS

Note (1)

PC Board Ass'y	Version	Designated Areas
ENJ-067 B	A BS EF EN	Australia the U.K. Continental Europe Scandinavia
ENJ-067 C	G GI	Germany Italy
ENJ-067 D	U US UT	Universal Type Singapore Taiwan

TRANSISTORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	Q101	DTC144ES	SILICON ROHM	
	Q102	DTC144ES	SILICON ROHM	
	Q103	DTC144ES	SILICON ROHM	
	Q104	DTC144ES	SILICON ROHM	
	Q111	2SK301(P,Q)	F.E.T MATSUSHITA	
	Q112	2SK301(P,Q)	F.E.T MATSUSHITA	
	Q113	2SK301(P,Q)	F.E.T MATSUSHITA	
	Q114	2SK301(P,Q)	F.E.T MATSUSHITA	
	Q115	2SK301(P,Q)	F.E.T MATSUSHITA	
	Q116	2SK301(P,Q)	F.E.T MATSUSHITA	
	Q135	DTC144ES	SILICON ROHM	
	Q137	DTC144ES	SILICON ROHM	
	Q159	DTC144ES	SILICON ROHM	
	Q185	2SD2144S(VW)	SILICON ROHM	
	Q186	2SD2144S(VW)	SILICON ROHM	
	Q251	2SC1740S(R,S)	SILICON ROHM	
	Q252	2SC1740S(R,S)	SILICON ROHM	
	Q253	2SC1740S(R,S)	SILICON ROHM	
	Q254	2SC1740S(R,S)	SILICON ROHM	
	Q255	2SC1740S(R,S)	SILICON ROHM	
	Q256	2SC1740S(R,S)	SILICON ROHM	
	Q257	2SC1740S(R,S)	SILICON ROHM	
	Q275	2SD2144S(VW)	SILICON ROHM	
	Q276	2SD2144S(VW)	SILICON ROHM	
	Q277	DTA144ES	SILICON ROHM	
	Q281	2SD2037(E,F)	SILICON ROHM	
	Q282	2SB1357(E,F)	SILICON ROHM	
	Q301	2SA934(Q,R)	SILICON ROHM	
	Q302	DTC114WS	SILICON S001	
	Q303	DTC144TS	SILICON ROHM	
	Q304	DTC144TS	SILICON ROHM	
	Q305	2SC1740S(R,S)	SILICON ROHM	
	Q306	DTC144ES	SILICON ROHM	
	Q307	DTC114WS	SILICON S001	
	Q351	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q352	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q354	2SC1740S(R,S)	SILICON ROHM	
	Q401	DTC114ES	SILICON ROHM	
	Q402	DTA114TS	SILICON ROHM	
	Q452	DTC114YS	SILICON ROHM	
	Q453	DTC114YS	SILICON ROHM	
	Q454	2SA933S(R,S)	SILICON	
	Q455	2SA933S(R,S)	SILICON	
	Q456	DTC144ES	SILICON ROHM	
	Q457	DTC144ES	SILICON ROHM	
	Q471	2SC1740S(R,S)	SILICON ROHM	
	Q515	DTC114YS	SILICON ROHM	
	Q516	DTC114YS	SILICON ROHM	

⚠ : SAFETY PARTS

I. C. S.

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC101	UPC1330HA	I.C. NEC	
	IC111	VC4580LD	I.C. DAINICHI	
	IC112	VC4580LD	I.C. DAINICHI	
	IC201	HA12155NT	I.C. HITACHI	
	IC202	M62302P	I.C. MITSUBISHI	
	IC301	UPC1297CA	I.C. NEC	
	IC401	HD614081SD46	I.C. HITACHI	
	IC451	TA8409S	I.C. TOSHIBA	
	IC452	TA8409S	I.C. TOSHIBA	
	IC453	TA8409S	I.C. TOSHIBA	
	IC454	TA8409S	I.C. TOSHIBA	

⚠ : SAFETY PARTS

DIODES

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	D135	MTZ2.7JB	ZENER ROHM	
	D159	MTZ2.7JB	ZENER ROHM	
	D251	1SS119	SILICON HITACHI	
	D253	1SR35-200A	SILICON ROHM	
	D271	1SS119	SILICON HITACHI	
	D272	1SS119	SILICON HITACHI	
	D281	MTZ7.5JC	ZENER ROHM	
	D282	MTZ7.5JC	ZENER ROHM	
	D301	1SS119	SILICON HITACHI	
	D354	1SS119	SILICON HITACHI	
	D401	1SS119	SILICON HITACHI	
	D402	MTZ3.9JB	ZENER ROHM	
	D421	1SS119	SILICON HITACHI	
	D431	1SS119	SILICON HITACHI	
	D432	1SS119	SILICON HITACHI	
	D433	1SS119	SILICON HITACHI	
	D434	1SS119	SILICON HITACHI	
	D501	1SS119	SILICON HITACHI	
	D502	1SS119	SILICON HITACHI	
	D503	1SS119	SILICON HITACHI	
	D504	1SS119	SILICON HITACHI	
	D505	1SS119	SILICON HITACHI	
	D506	1SS119	SILICON HITACHI	
	D511	SLR-342MCA47	L.E.D. ROHM	
	D512	SLR-342MCA47	L.E.D. ROHM	
	D513	SLR-342MCA47	L.E.D. ROHM	
	D514	SLR-342MCA47	L.E.D. ROHM	
	D515	SLH-34VC50F124	L.E.D. ROHM	
	D516	SLR-342VC3F	L.E.D. ROHM	
	D517	LD-702MG	L.E.D. ROHM	
	D518	LD-702MG	L.E.D. ROHM	
	D519	1SS119	SILICON HITACHI	
	D520	1SS119	SILICON HITACHI	

⚠ : SAFETY PARTS

CAPACITORS

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C101	QCBB1HK-331	330PF 50V CERAMIC	
	C102	QCBB1HK-331	330PF 50V CERAMIC	
	C103	QCY21HK-152	1500PF 50V CERAMIC	
	C104	QCY21HK-152	1500PF 50V CERAMIC	
	C107	QCY21HK-182	1800PF 50V CERAMIC	
	C108	QCY21HK-182	1800PF 50V CERAMIC	
	C109	QCS11HJ-101	100PF 50V CERAMIC	
	C110	QCS11HJ-101	100PF 50V CERAMIC	
	C111	QFN41HJ-822	8200PF 50V MYLAR	
	C112	QFN41HJ-822	8200PF 50V MYLAR	
	C113	QCBB1HK-101	100PF 50V CERAMIC	
	C113	QCBB1HK-471	470PF 50V CERAMIC	G
	C113	QCBB1HK-471	470PF 50V CERAMIC	GI
	C114	QCBB1HK-101	100PF 50V CERAMIC	
	C114	QCBB1HK-471	470PF 50V CERAMIC	G
	C114	QCBB1HK-471	470PF 50V CERAMIC	GI
	C117	QET41AM-107	100MF 10V ELECTRO	
	C118	QET41AM-107	100MF 10V ELECTRO	
	C141	QFN41HJ-822	8200PF 50V MYLAR	
	C142	QFN41HJ-822	8200PF 50V MYLAR	
	C143	QCBB1HK-101	100PF 50V CERAMIC	
	C143	QCBB1HK-471	470PF 50V CERAMIC	G
	C143	QCBB1HK-471	470PF 50V CERAMIC	GI
	C144	QCBB1HK-101	100PF 50V CERAMIC	
	C144	QCBB1HK-471	470PF 50V CERAMIC	G
	C144	QCBB1HK-471	470PF 50V CERAMIC	GI
	C145	QET41AM-107	100MF 10V ELECTRO	
	C146	QET41AM-107	100MF 10V ELECTRO	
	C151	QCBB1HK-101	100PF 50V CERAMIC	
	C152	QCBB1HK-101	100PF 50V CERAMIC	
	C161	QET41AM-107	100MF 10V ELECTRO	
	C163	QET41HM-105	1MF 50V ELECTRO	
	C164	QET41HM-105	1MF 50V ELECTRO	
	C167	QFN81HJ-272	2700PF 50V MYLAR	
	C168	QFN81HJ-272	2700PF 50V MYLAR	
	C169	QFN81HJ-222	2200PF 50V MYLAR	
	C170	QFN81HJ-222	2200PF 50V MYLAR	
	C171	QFN81HJ-222	2200PF 50V MYLAR	
	C172	QFN81HJ-222	2200PF 50V MYLAR	
	C173	QET41EM-106	10MF 25V ELECTRO	
	C174	QET41EM-106	10MF 25V ELECTRO	
	C175	QFN81HJ-222	2200PF 50V MYLAR	
	C176	QFN81HJ-222	2200PF 50V MYLAR	
	C177	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C178	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C179	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C180	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C181	QFVB1HJ-103N	0.01MF 50V T.FILM	
	C182	QFVB1HJ-103N	0.01MF 50V T.FILM	
	C183	QET41HM-105	1MF 50V ELECTRO	
	C184	QET41HM-105	1MF 50V ELECTRO	
	C185	QCF11HP-473	0.047MF 50V CERAMIC	
	C186	QCF11HP-473	0.047MF 50V CERAMIC	
	C191	QETB1HM-225	2.2MF 50V ELECTRO	
	C192	QETB1HM-225	2.2MF 50V ELECTRO	

⚠ : SAFETY PARTS

■ Parts List

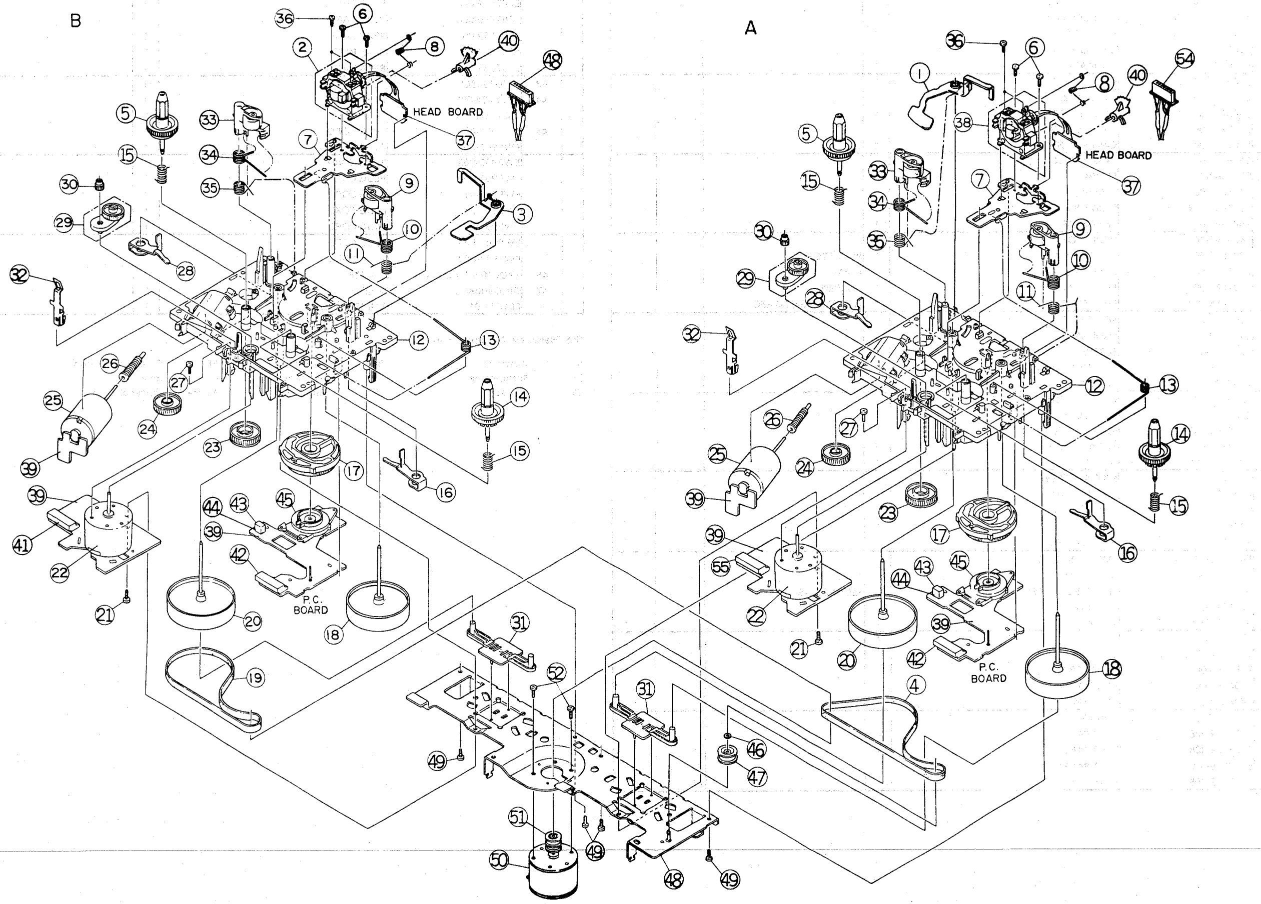
⚠	Item	Part Number	Part Name	Q'ty	Description	Area
	1	E102632-006	FRONT PANEL	1		
	2	E102637-002SA	CASS.LID ASSY	1		
	2-1	E102637-002	CASS.LID (A)	1		
	2-2	E308209-001	CASS.LENS(A)	1		
	2-3	E406971-221	JVC MARK	1		
	3	E102639-004SA	CASS.LID ASSY	1		
	3-1	E102639-004	CASS.LID(B)	1		
	3-2	E308211-001	CASS.LENS(B)	1		
	4	E207642-001	CASS.HOLDER(A)	1		
	5	E207643-001	CASS.HOLDER(B)	1		
	6	E406713-001	CASS. SPRING	1		
	7	SBST3006M	SCREW	4		
	8	E406855-008	SPACER	1		
	9	E304434-003	DUMPER ASSY	1		
	10	E407241-001	INDICATOR	1		
	11	E407242-001	INDICATOR	1		
	12	E207648-001	PUSH.B.ASSY	1	PLAY·STOP	
	13	E207651-001	PUSH.B.ASSY	1	PLAY·STOP	
	14	E207654-001	PUSH BUTTON	1	DUBBING	
	15	E207655-002	PUSH BUTTON	1	FUZZZY LOGIC CD REC	
	16	E60912-003	SPEED NUT	1		
	17	E407239-001	SLIDE KNOB	1		
	18	SDSF2608Z	SCREW	4		
	19	E308205-001	EJECT BUTTON(A)	1		
	20	E407237-001	PUSH PLATE	1		
	21	E308207-001	EJECT BUTTON(B)	1		
	22	E407238-001	PUSH PLATE	1		
	23	E308204-002	EJECT GUIDE	1		
	24	E207591-002	METAL COVER	1		
	25	SDSG3008M	SCREW	2		
	26	E73273-003	SPECIAL SCREW	4		
	27	E102462-001	CHASSIS BASE	1		
	28	SBST3006Z	SCREW	1		
	29	E406855-005	SPACER	1		
	30	E407324-001	HOLDER SPRING	1		
	31	E407325-001	HOLDER SPRING	1		
	32	E207641-002	HOLDER BKT	1		
	33	---------------	CASS.MECHA ASSY	1	SEE PAGE 2-5	
	34	E65923-001	T.SCREW	1		
	35	SBST3008C	SCREW	2		
	36	SBSF3010C	SCREW	4		
	37	E308202-001	EJEC LEVER(A)	1		
	38	E406669-001	EJECT SPRING(A)	1		
	39	E308203-001	EJEC LEVER(B)	1		
	40	E406670-001	EJECT SPRING(B)	1		
	41	E73967-010	SPACER	1		
	42	E207639-008	REAR PANEL	1		A
		E207639-008	REAR PANEL	1		BS
		E207639-008	REAR PANEL	1		EF
		E207639-008	REAR PANEL	1		EN
		E207639-008	REAR PANEL	1		G
		E207639-008	REAR PANEL	1		GI
		E207639-007	REAR PANEL	1		U
		E207639-007	REAR PANEL	1		US
		E207639-007	REAR PANEL	1		UT
	43	SBSG3008CC	SCREW	1		
	44	ENZ8104-001	CLAMP FILT	1		G
		ENZ8104-001	CLAMP FILT	1		GI
	45	EWP907-003	PLUG CORD	1		A
		EWP907-003	PLUG CORD	1		BS
		EWP907-003	PLUG CORD	1		EF
		EWP907-003	PLUG CORD	1		EN
		EWP907-013	PLUG CORD	1		G
		EWP907-013	PLUG CORD	1		GI
		EWP907-003	PLUG CORD	1		U
		EWP907-003	PLUG CORD	1		US
		EWP907-003	PLUG CORD	1		UT
	46	EXO010005A03S14	SPACER	1		
	47	GBSG3008CC	SCREW	2		
	-	E61029-011	NUMBER LABEL	1		

⚠ : Safety Parts

The Marks for Designated Areas

A ..... Australia
EN .... Scandinavia
US .... Singapore
BS .... the U.K.
G ..... Germany
UT .... Taiwan
EF ..... Continental Europe
GI ..... Italy
No mark indicates all area.

Cassette Mechanism Ass'y and Parts List


B
36
6
2
8
40
48
HEAD BOARD
5
33
37
7
15
34
30
35
9
3
29
10
28
11
32
12
13
26
27
25
24
14
23
17
15
39
16
39
44
43
45
41
39
22
42
P.C. BOARD
21
20
18
19
31
52
49
51
50
49
48
49
A
36
6
54
1
8
40
5
38
HEAD BOARD
15
33
7
37
34
35
9
30
10
29
28
11
32
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26
27
14
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24
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17
16
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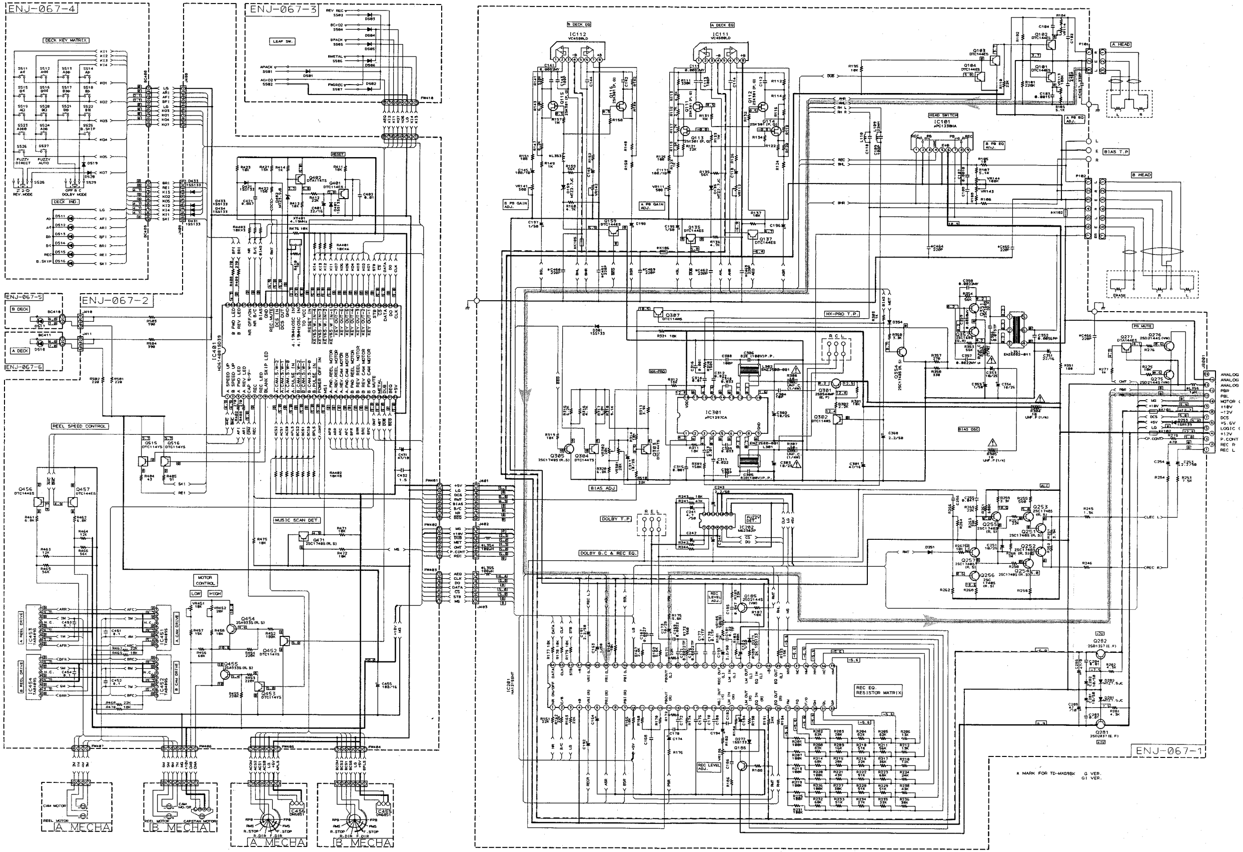
45
44
22
21
39
20
42
P.C. BOARD
18
4
31
46
47

Schematic Diagram

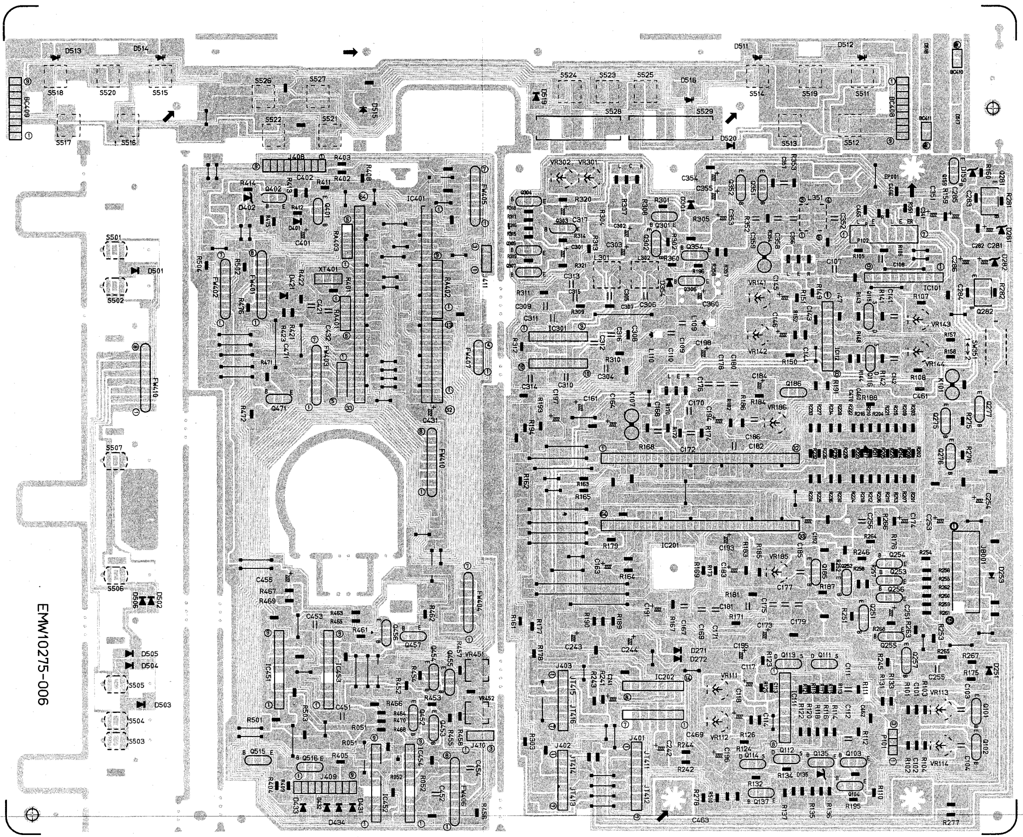

ENJ-067-4
DECK KEY MATRIX
DECK IND.
ENJ-067-3
LEAF SW.
RESET
ENJ-067-5
B DECK
A DECK
ENJ-067-6
ENJ-067-2
IC401
REEL SPEED CONTROL
MUSIC SCAN DET
MOTOR CONTROL
LOW
HIGH
A REEL DRIVE
B REEL DRIVE
A CAM DRIVE
B CAM DRIVE
A MECHA
B MECHA
B DECK EQ
A DECK EQ
IC112
IC111
B PB GAIN ADJ.
A PB GAIN ADJ.
HEAD SWITCH
IC101
A HEAD
B HEAD
BIAS T.P
ERASE
HX-PRO T.P.
R.C.L.
IC301
BIAS ADJ
BIAS OSC
DOLBY T.P
DOLBY B.C & REC EQ.
IC201
REC LEVEL ADJ.
REC EQ. RESISTOR MATRIX
ALC
PB MUTE
ENJ-067-1
* MARK FOR TD-MXG9BK G VER. G1 VER.

Notes:

1. ——— indicates +B power supply
2. ----- indicates −B power supply.
3. ▨ indicates main signal path.
4. When replacing the parts in the shaded are (▨) and those marked with ⚠ , be sure to use the designated parts to ensure safety.
5. The design and contents are subject to change without notice.

Printed Circuit Board

■ **ENJ-067**


EMW10275-006
IC401
IC301
IC101
IC201
IC202
IC451
IC453
IC452
IC454
IC111
J408
J409
J401
J402
J403
BC409
BC408
FW401
FW402
FW404
FW405
FW406
FW407
FW410
S501
S502
S503
S504
S505
S506
S507
S511
S512
S513
S514
S515
S516
S517
S518
S519
S520
S521
S522
S523
S524
S525
S526
S527
S528
S529
D511
D512
D513
D514
D515
D516
D519
D520
XT401
RA401
RA402
K101
SW351

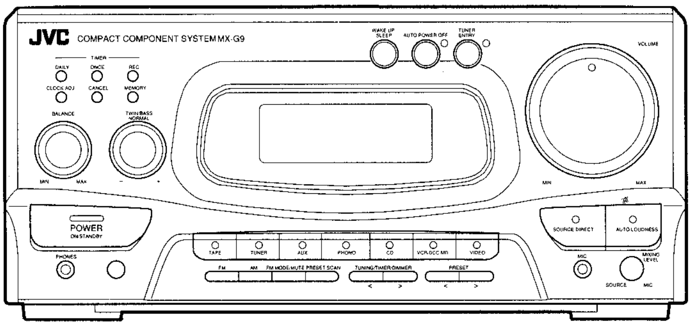
JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

CA-MXG9BK/XT-MXG9BK

(Unit No. RX-MXG9BK)


JVC COMPACT COMPONENT SYSTEM MX-G9
WAKE UP SLEEP
AUTO POWER OFF
TUNER ENTRY
VOLUME
TIMER
DAILY
ONCE
REC
CLOCK ADJ
CANCEL
MEMORY
BALANCE
TWIN BASS NORMAL
MIN
MAX
-
+
MIN
MAX
POWER
ON/STANDBY
SOURCE DIRECT
AUTO LOUDNESS
TAPE
TUNER
AUX
PHONO
CD
VCR/DCC MD
VIDEO
PHONES
FM
AM
FM MODE/MUTE PRESET SCAN
TUNING/TIMER/DIMMER
PRESET
<
>
<
>
MIC
MIXING LEVEL
SOURCE
MIC

Note 1. This manual is for one part of the titled model consisting of the plural units as detailed.

Unit No. Consisted	*Part of Model*	*Manual No.*
RX-MXG9BK	*TUNER-AMPLIFIER*	*20434*
SE-MXG9BK	*S.E.A. GRAPHIC EQUALIZER*	*20435*
XL-MXG9BK	*COMPACT DISC PLAYER*	*20436*
TD-MXG9BK	*CASSETTE DECK*	*20437*

2. RX-MXG9BK is needed for the power supply when servicing the unit not provided with the power (mains) cord.

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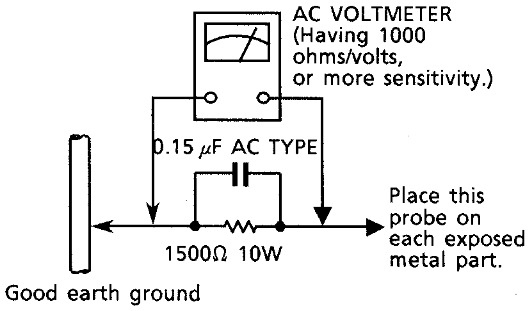
Description of Major LSIs 1-43
Internal Connection of FL Display Tube .. 1-49
Disassembly Procedures 1-50
Adjustment Procedures 1-51
Block Diagrams 1-52
Schematic Diagrams .... Insertion
Printed Circuit Boards .... Insertion
Parts List .... Insertion

〒103東京都中央区日本橋本町4-8-14
日本ビクター株式会社
サービス部　部品管理課

Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute repalcement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, contorl shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10 W resistor paralleled by a 0.15 µF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor.
     Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

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Connecting Rear Speakers and Center Speaker 5
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About this Manual

The Engineers at JVC have made the CA-MXG9BK very easy to use, and if you are experienced using audio equipment, you can figure out how to use some of the CA-MXG9BK controls by yourself. However, we have built some new features into this model, which you can learn about easily from the manual.

If you are a new user or just want a review, this manual explains how to use the CA-MXG9BK and take advantage of its features for playing and recording music, as well as other sounds. One way to use this manual is to read it through now and refer back to it when you need to refresh your skills for some special operation. Of course you can just look up the topics for things you want to do, such as recording a CD, but remember that you may need to refer to other parts of the manual for some of the instruction: for instance, in explaining how to record a CD, we assume you already know how to load a CD. That's why we recommend that you read the manual through once before starting. We've made it short, and easy to follow.

However, before you proceed, please read the Cautions on page 3 and the set-up directions.

How This Manual Is Organized

This manual is designed to accommodate several languages. To keep the size from becoming too great, yet still give you a top quality instruction manual, we have incorporated some special features:

- This manual is composed of 2 parts:
  Easy Guide (page 3-8) and Features Guide (page 9 - 38). Easy Guide describes basic operations and Features Guide describes other operations specific to this Unit.
- A fold-out page to look at while you read the instructions shows the front controls of the CA-MXG9BK. Some procedures have the illustrations of which control to use right with them, and for some you will need to look at the fold-out for the illustration.
- Basic information that is the same for many different functions is grouped in one place, and not repeated in each procedure. For instance, in the section on playing a CD, we do not repeat the information about setting the volume and the sound conditioning, which we talked about in the Easy Guide section.
- The illustrations on the left of the page are labeled to correspond to the explanations on the right. If a procedure is labeled with steps 1, 2, 3, then the illustrations on the left will also be labeled 1, 2, 3. This relationship makes it easy to read the explanation and also see what to do to accomplish your goal.

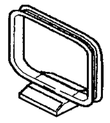
The manual has a table of contents to help you easily look up what you want to know.
We've enjoyed making this manual for you, and hope you will use it to enjoy the sound and many features built into your CA-MXG9BK.

Easy Guide

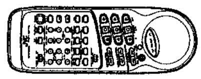
Getting Started

Check to be sure you have all of the following items, which are supplied with the CA-MXG9BK.

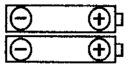
If anything is missing, contact your dealer immediately.



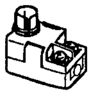
AM Antenna



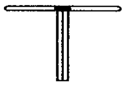
Remote Control



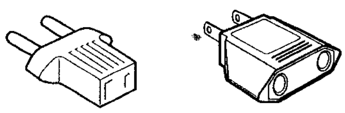
Batteries



Antenna Adaptor



FM Feeder Antenna



type A **type B**

AC Plug Adaptor

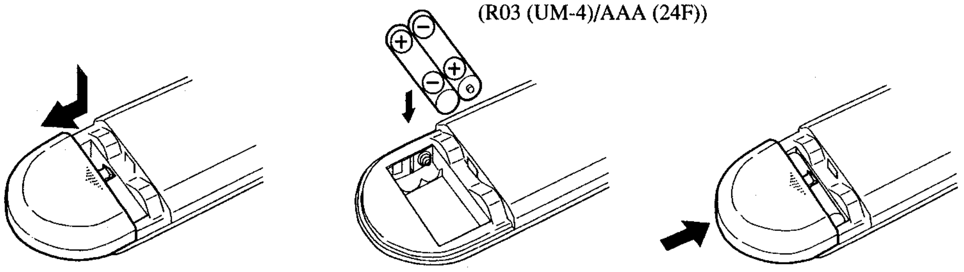
When the power plug is a flat blade type, the type A adaptor is supplied.
When the power plug is a round prong type, the type B adaptor is supplied.

IMPORTANT CAUTIONS

1. **Installation of the Unit**
   - Select a place which is level, dry and neither too hot nor too cold (between 5°C and 35°C).
   - Leave enough distance between the Unit and your TV to prevent interference.
   - Do not use the Unit in a place subject to vibration.
2. **Power cord**
   - Do not handle the power cord with wet hands!
   - When unplugging from the wall outlet, always pull the plug, not the power cord.
   - A small amount of power (16 watts) is consumed even in the STANDBY mode. To shut off the power completely, unplug the power cord from the outlet.
3. **Malfunctions, etc.**
   - There are no user serviceable parts inside. If anything goes wrong, unplug the power cord and consult your dealer.
   - Do not insert any metallic object into the Unit.

Putting Batteries in the Remote

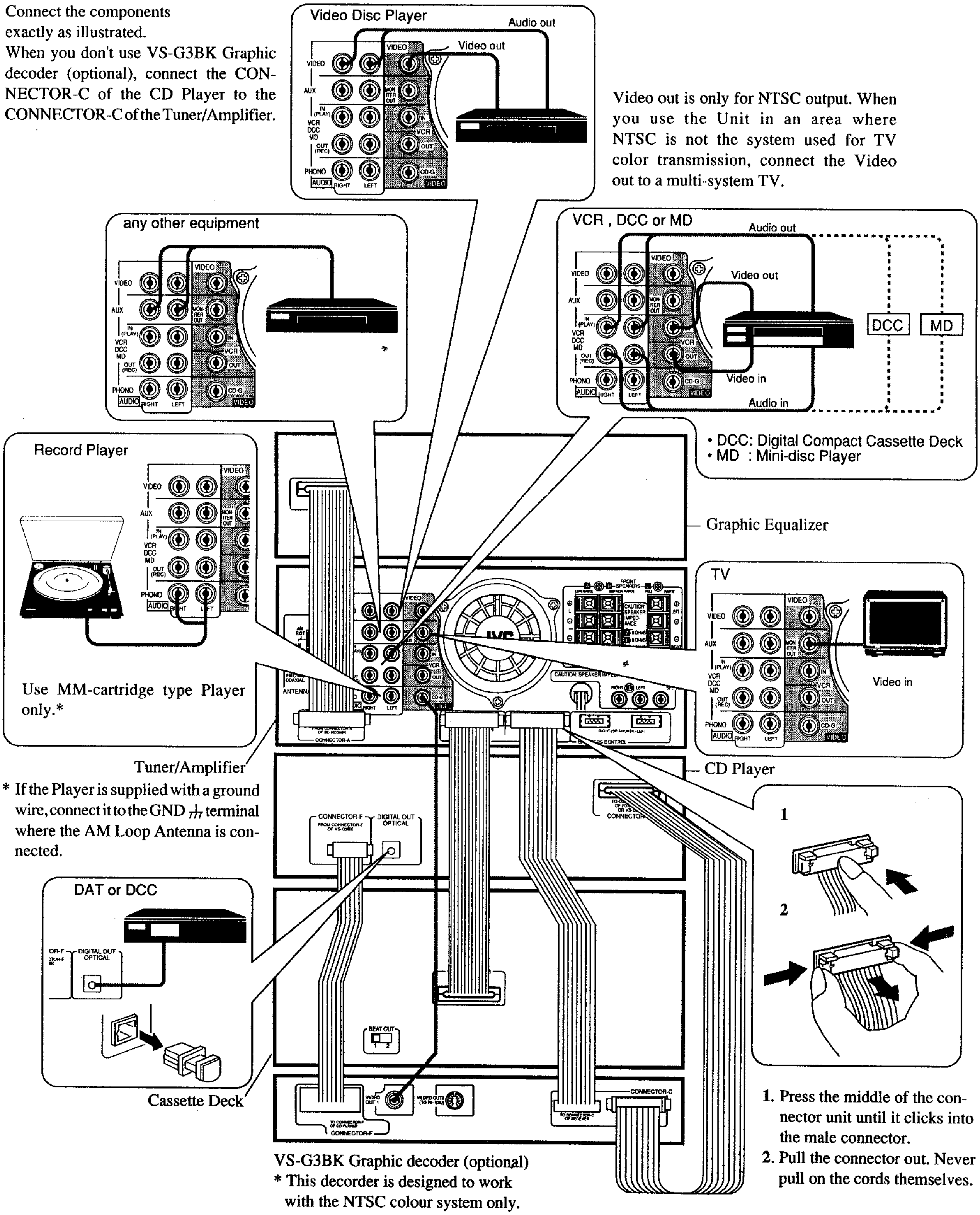
Pay close attention to getting the batteries in correctly—we've made it very easy, just match the + and – marks on the batteries with the + and – markings in the battery compartment.



CAUTION: Observe Proper Handling of Batteries.
To avoid battery leakage or explosion:
- Remove batteries when the Remote will not be used for a long time.
- When you need to replace the batteries, replace both batteries at the same time with new ones.
- Don't use an old battery together with a new one.
- Don't use different types of batteries together.

Connecting the System Control Cords and Connecting Auxiliary Equipment

Connect the components exactly as illustrated.
When you don't use VS-G3BK Graphic decoder (optional), connect the CONNECTOR-C of the CD Player to the CONNECTOR-C of the Tuner/Amplifier.


Video Disc Player
Audio out
Video out
any other equipment
VCR , DCC or MD
Audio out
Video out
DCC
MD
Video in
Audio in
Record Player
Graphic Equalizer
TV
Video in
Tuner/Amplifier
CD Player
DAT or DCC
Cassette Deck
1
2
VIDEO
AUX
VCR DCC MD
PHONO
AUDIO
RIGHT
LEFT
BEAT CUT
1 2
CONNECTOR-F
DIGITAL OUT OPTICAL
CONNECTOR-C

Video out is only for NTSC output. When you use the Unit in an area where NTSC is not the system used for TV color transmission, connect the Video out to a multi-system TV.

- DCC: Digital Compact Cassette Deck
- MD : Mini-disc Player

Use MM-cartridge type Player only.*

* If the Player is supplied with a ground wire, connect it to the GND ⏚ terminal where the AM Loop Antenna is connected.

VS-G3BK Graphic decoder (optional)
* This decorder is designed to work with the NTSC colour system only. Use a multi-system TV can reproduce the NTSC system.

1. Press the middle of the connector unit until it clicks into the male connector.
2. Pull the connector out. Never pull on the cords themselves.

* Match the polarity of the 5 terminals. A-A, B-B, C-C, RIGHT-RIGHT, LEFT-LEFT. RIGHT and LEFT are for speakers.

BEAT CUT
1 2

When recording an AM (MW/LW) broadcasting program, beat sounds may be heard and recorded.
Set the BEAT CUT selector to either 1 or 2, so that beat sounds will not be heard nor recorded.

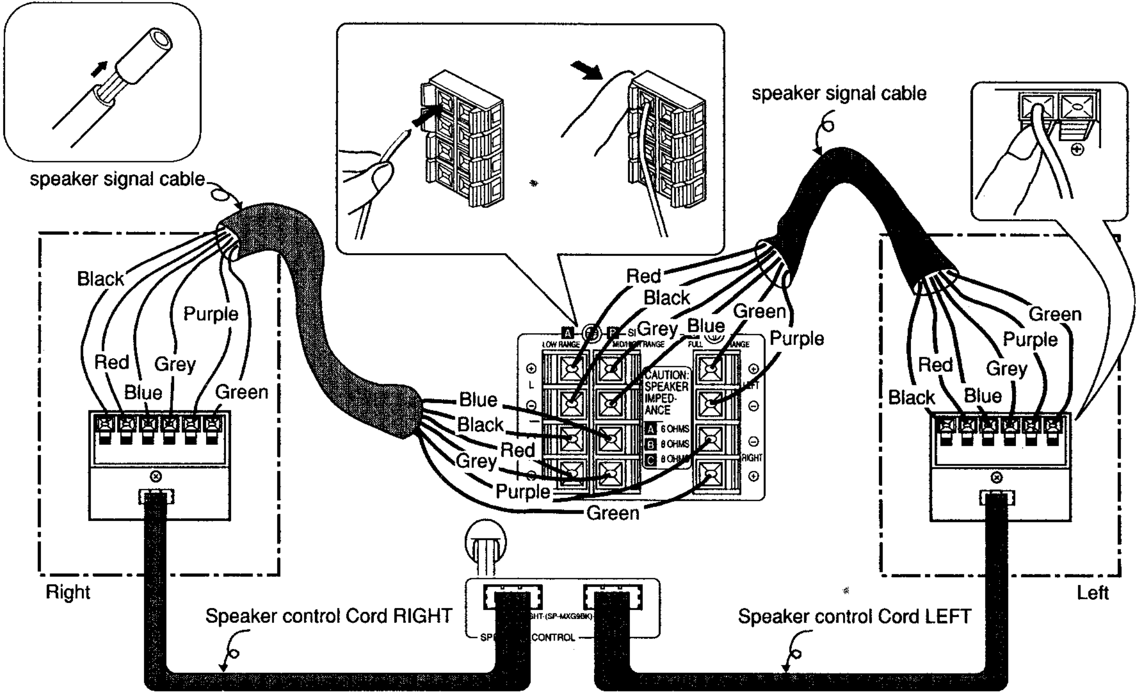
CAUTION: First make all connections before plugging the Unit into an AC power outlet.

Connecting the Front Speakers (Optional Speakers SP-MXG9BK)

Using DOLBY 3CH LOGIC mode (without center speaker)

For each speaker connect one end of the supplied speaker signal cable to the speaker terminals on the back of the CA-MXG9BK and one end to the speaker. On the back panel:

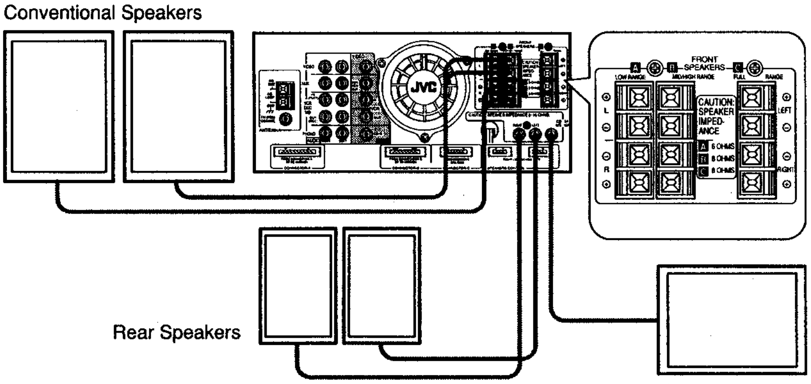
1. Open each terminal.
2. Insert the end of the speaker signal cable as shown (be sure to remove the insulation at the end of each wire first).
3. Close the terminals to clamp the speaker signal cables firmly in place.
4. Connect the black (–), red (+), blue (–), grey (+), purple (–) and green (+) terminals of the right side speaker to the black (–), red (+), blue (–), grey (+) terminals marked **A**, **B** R, purple (–) and green (+) terminals marked **C** R on the CA-MXG9BK.
   Connect the black (–), red (+), blue (–), grey (+), purple (–) and green (+) terminals of the left side speaker to the black (–), red (+) blue (–), grey (+) terminals marked **A**, **B** L, purple (–) and green (+) terminals marked **C** L on the CA-MXG9BK.
5. Connect SPEAKERS CONTROL RIGHT and LEFT with the supplied speaker control cords.


speaker signal cable
speaker signal cable
Black
Purple
Red
Grey
Blue
Green
Red
Black
Grey
Blue
Green
Purple
LOW RANGE
MID/HIGH RANGE
FULL RANGE
CAUTION: SPEAKER IMPEDANCE
A 6 OHMS
B 8 OHMS
C 8 OHMS
L
LEFT
RIGHT
Blue
Black
Red
Grey
Purple
Green
Green
Purple
Red
Grey
Black
Blue
Right
Left
Speaker control Cord RIGHT
Speaker control Cord LEFT
SPEAKERS CONTROL

Connecting Rear Speakers and Center Speaker

Using DOLBY PRO LOGIC mode, 3CH LOGIC mode (with center speaker), and SEP. C mode

*** By connecting the Front Speakers, Rear Speakers and Center Speaker, you can use the various modes.**


Conventional Speakers
FRONT SPEAKERS
LOW RANGE
MID/HIGH RANGE
FULL RANGE
CAUTION: SPEAKER IMPEDANCE
A 6 OHMS
B 8 OHMS
C 8 OHMS
L
R
LEFT
RIGHT
Rear Speakers
Center Speaker

Rear Speakers

- Connect the terminal of the right speaker to the terminal marked RIGHT on the CA-MXG9BK.
- Connect the terminal of the left speaker to the terminal marked LEFT on the CA-MXG9BK.

Note:You can use optional rear speakers SP-ES5BK.

Center Speaker

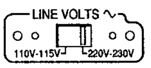
- Connect the terminal of the center speaker to the terminal marked CENTER SPEAKER on the CA-MXG9BK.

Note:You can only use a center speaker which has 8~16 ohms speaker impedance.

When you use your own speakers – Conventional Speakers

- Connect the (+) and (–) terminals of the right speaker to the grey (+) and blue (–) terminals marked **B** R on the CA-MXG9BK.
- Connect the (+) and (–) terminals of the left speaker to the grey (+) and blue (–) terminals marked **B** L on the CA-MXG9BK.

Note:You can only use **B** **R** *and* **L** *terminals to connect conventional speakers.*

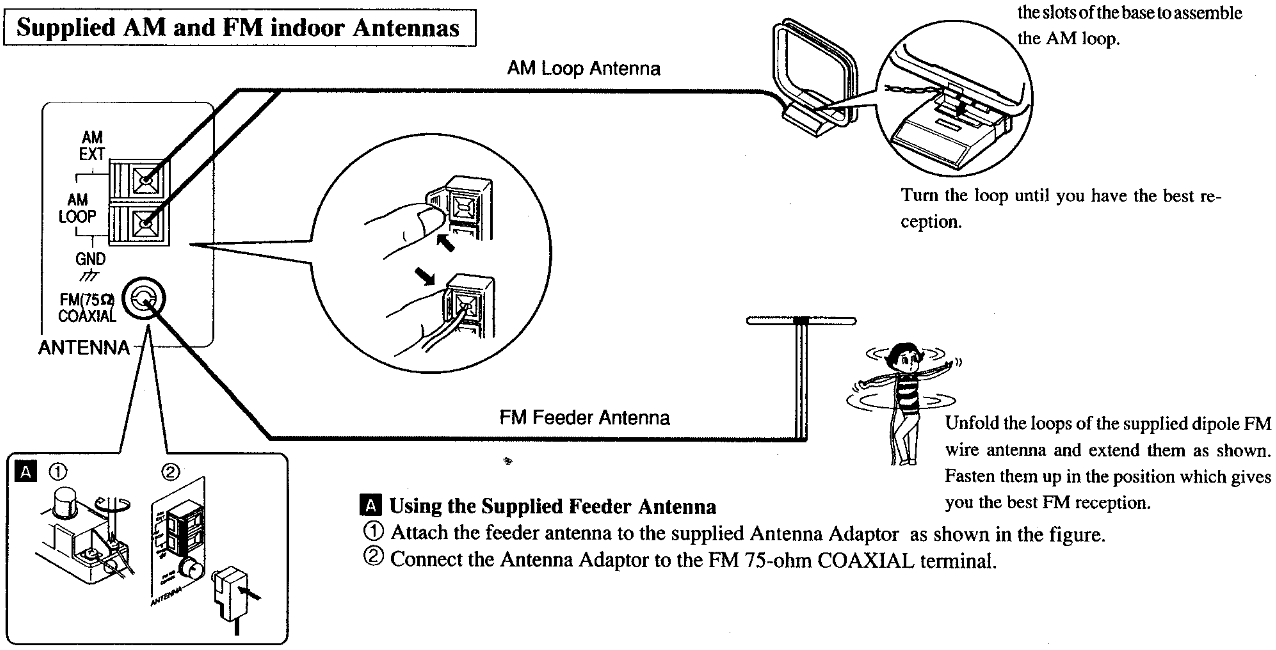

LINE VOLTS ∿
110V-115V
220V-230V

Set the VOLTAGE SELECTOR Switch

To avoid damaging the CA-MXG9BK, set the voltage before plugging in the unit.
Set the correct voltage for your area with the VOLTAGE SELECTOR switch on the back panel.
Use a slotted bit-screwdriver to set the selector so the number the same as the voltage where you are plugging in the Unit.

Connecting the AM and FM Antennas

Supplied AM and FM indoor Antennas


AM Loop Antenna
AM EXT
AM LOOP
GND
FM(75Ω) COAXIAL
ANTENNA
FM Feeder Antenna
A ①
②

Snap the tabs on the loop into the slots of the base to assemble the AM loop.

Turn the loop until you have the best reception.

Unfold the loops of the supplied dipole FM wire antenna and extend them as shown. Fasten them up in the position which gives you the best FM reception.

A Using the Supplied Feeder Antenna

① Attach the feeder antenna to the supplied Antenna Adaptor as shown in the figure.

② Connect the Antenna Adaptor to the FM 75-ohm COAXIAL terminal.

Outdoor Antenna Connections

B Using FM 75-ohm Antenna Cable (Not Supplied)

① Open the claws at both sides and remove the cover.

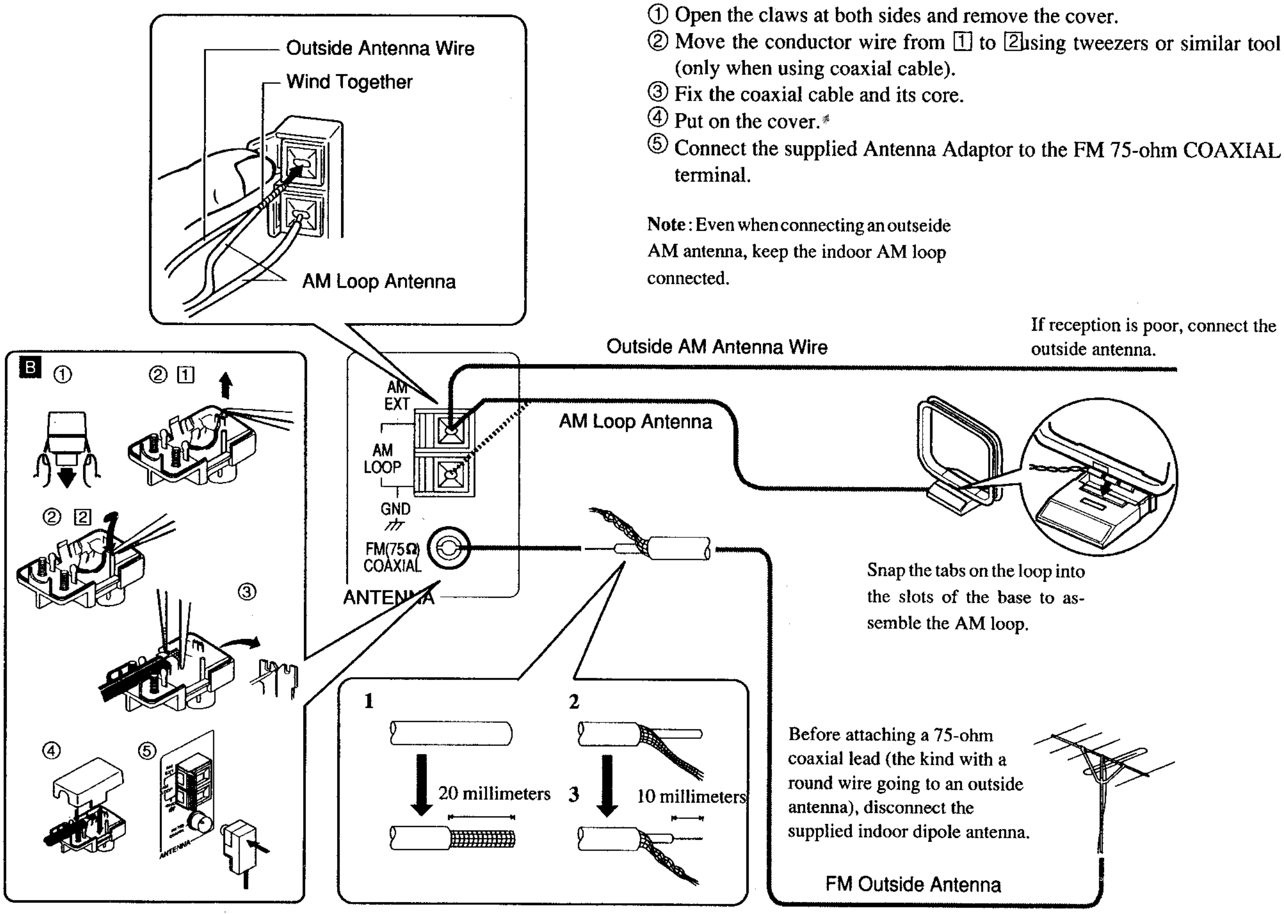
② Move the conductor wire from 1 to 2 using tweezers or similar tool (only when using coaxial cable).

③ Fix the coaxial cable and its core.

④ Put on the cover.

⑤ Connect the supplied Antenna Adaptor to the FM 75-ohm COAXIAL terminal.

Note: Even when connecting an outseide AM antenna, keep the indoor AM loop connected.


Outside Antenna Wire
Wind Together
AM Loop Antenna
Outside AM Antenna Wire
AM EXT
AM LOOP
GND
FM(75Ω) COAXIAL
ANTENNA
AM Loop Antenna
B ①
② 1
② 2
③
④
⑤
1
2
20 millimeters
3
10 millimeters
FM Outside Antenna

If reception is poor, connect the outside antenna.

Snap the tabs on the loop into the slots of the base to assemble the AM loop.

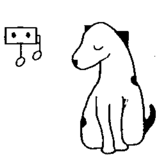
Before attaching a 75-ohm coaxial lead (the kind with a round wire going to an outside antenna), disconnect the supplied indoor dipole antenna.

If reception is poor, connect an outside antenna.

How to Strip the 75-ohm Coaxial Cable

1. Strip back the outside covering of the 75-ohm coaxial cable to expose the braided metallic mesh.
2. Pull the mesh back and twist into a single connector as shown.
3. Strip the insulation about 10 mm back from the central wire.
4. Attach to the supplied Antenna Adaptor, as shown in the diagram above.

Turning on the Unit, Playing from a Tape, and Fast Winding or Rewinding

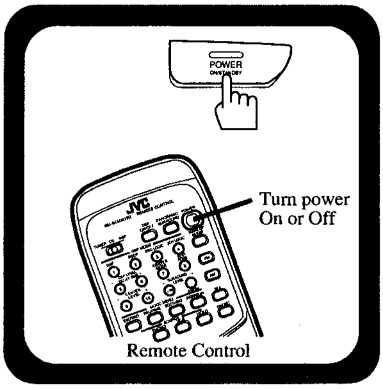


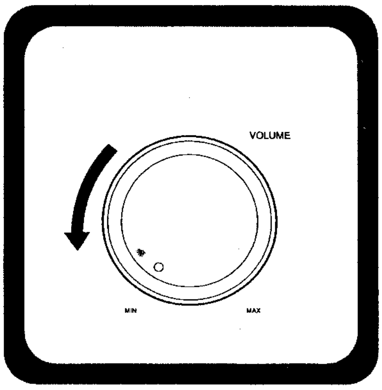
Turning on

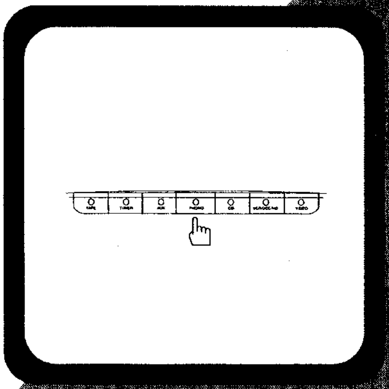
1. Press the POWER ON/ STANDBY button.
The LED on it goes off.

2. Turn down the VOLUME control completely.

3. Start a source playing.


POWER
ON/STANDBY
Turn power On or Off
Remote Control


VOLUME
MIN
MAX



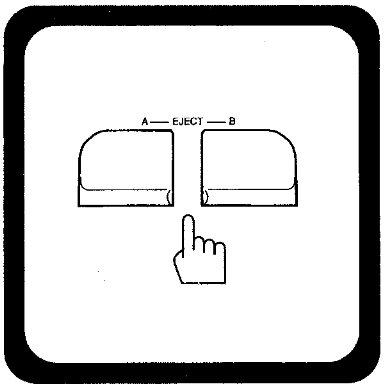
To turn off the Unit:
Press the POWER ON/STANDBY button.
The LED on it lights up.

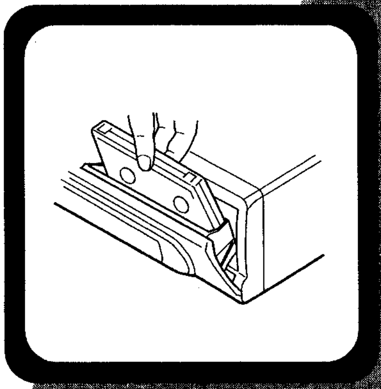
Playing a Tape

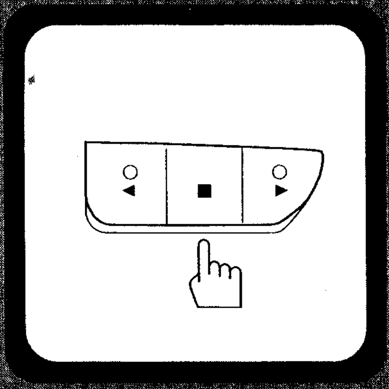
1. Press the EJECT button.

2. Put a tape in deck A or deck B.

3. Press the ▶ (or ◀) button.





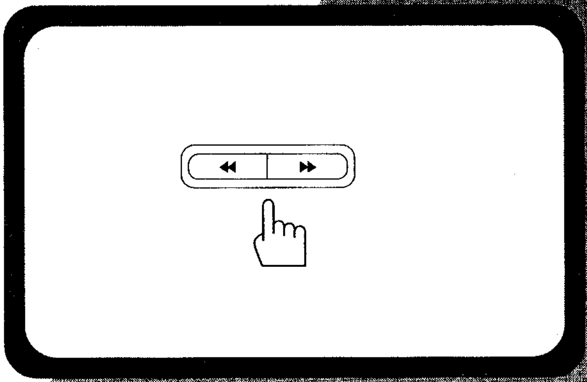


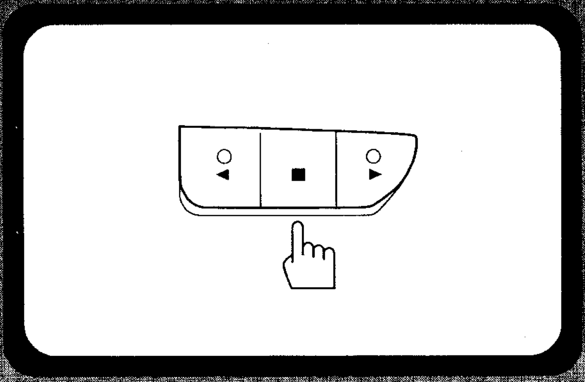
To stop playing:
Press the ■ button.

Fast Winding or Rewinding

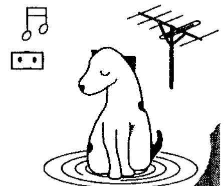
1.Press the ◀◀ or ▶▶ button.

2. To stop the Fast Winding or Rewinding:
Press the ■ button.





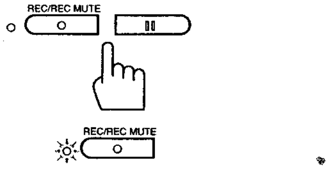
Note: To play a tape recorded with Dolby NR effect, see page 21 of the Features Guide section.



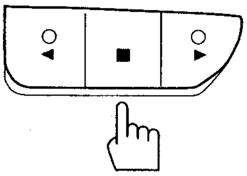
Recording onto a Tape, Receiving Radio Broadcasts, and Playing CDs

Recording onto a Tape

1. Press the REC/REC MUTE O button and the II button simultaneously.
The LED next to them lights up and the Unit will be in recording pause.



2. Start playing the source you want - CD, Radio, etc.
Press the ► (or ◄) button, depending on which side of the tape you want record on, to start recording.

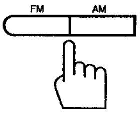


The LED on the ◄ (or ►)button will slowly blink to indicate recording is now on.

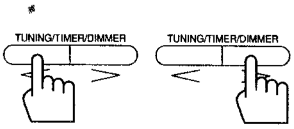
To stop Recording
Press the ■ button.

Receiving Radio Broadcasts

1. Press the FM or AM button to select the band.

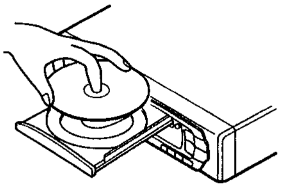


2. Press the TUNING/TIMER/DIMMER < or > button to tune in the desired stations.
When the Unit tunes in the station, TUNED lights up on the display.

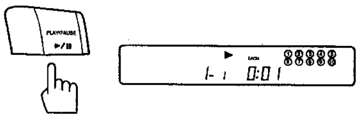


Playing CDs

1. Press the ▲ OPEN/CLOSE button . Load a CD on the tray.



2. Press the PLAY/PAUSE ►/II button.
The CD starts playing.

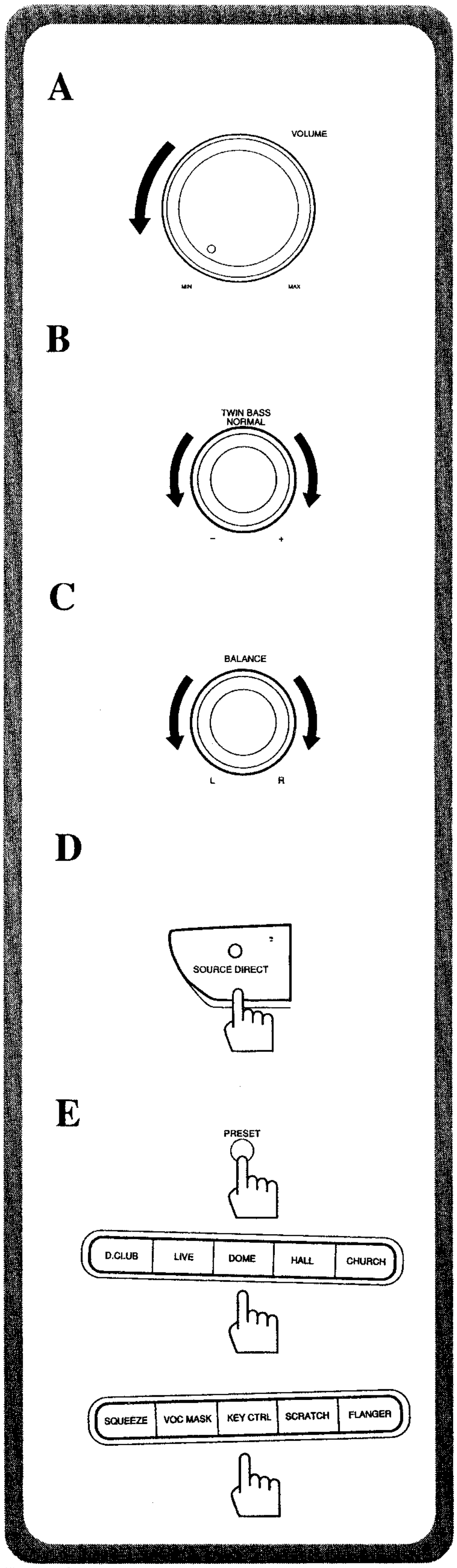


Note: [illegible]

To stop the CD playing
Press the STOP/CLEAR ■ button.

Features Guide

Features



A. Volume Control

CAUTION: Always set the VOLUME control to MIN before turning on a connected source such as a VCR or Record Player, or starting any of the other sound sources such as the radio, tape, or CD player. If the VOLUME control is left turned up, the sudden blast of sound energy can permanently damage your hearing and/or ruin your speakers.

STEREO ETIQUETTE

Have consideration for others.

Set the volume to a level which will not disturb others. At night, the CA-MXG9BK can still be enjoyed at low volume levels. Close the window or use headphones to avoid disturbing others.

B. Bass Control

You can reduce or increase the amount of Bass reinforcement by adjusting the TWIN BASS control. When set to the NORMAL position, no bass reinforcement is applied.

C. Balance Control

If the sounds you hear from the right and left speakers are unequal, you can adjust the speaker output balance with the BALANCE control.

D. High-fidelity Playback

When the SOURCE DIRECT button is pressed, the LED on the button comes on and "DIRECT ON" appears on the display. By bypassing the GRAPHIC EQUALIZER's effects, the path of the audio signal will be shortened, giving a higher fidelity sound.

E. Special Effects Controls:

SEA Preset Pattern, Panoramic Surround mode, DSP Programs (Dolby Pro Logic, DAP, DSEP)

Experiment with and set your special effects. If you don't want to use the effect, just press the DSP button. "DSP OFF" appears on the display.

SEA:

When the PRESET button is pressed, the LED on the SEA button also comes on. Each time you press the PRESET button, the SEA pattern will change. If you don't want to use the effect pattern, just press the SEA button, and when the LED goes off, so does the SEA effect.

DOLBY PRO LOGIC:

When either the PRO LOGIC or 3CH LOGIC button is pressed, the LED on the DSP button also comes on, and "PRO LOGIC" or "3CH LOGIC" appears on the display. To turn off the PRO LOGIC effects, just press the DSP button.

DAP: Digital Acoustic Processor

When the DAP mode buttons are pressed, the LED on the PANORAMIC SURROUND button and the DSP button also comes on. If you don't want to use the effect pattern, just press the DSP button.

DSEP: Digital Special Effects Processor

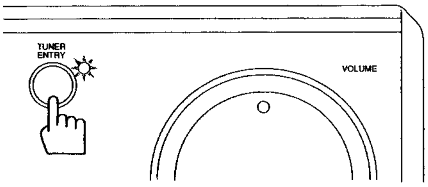
When the DSEP mode buttons are pressed, the LED on the DSP button also comes on. If you don't want to use the effect pattern, just press the DSP button.

- You can't use the DAP effect and the DSEP effect at the same time.

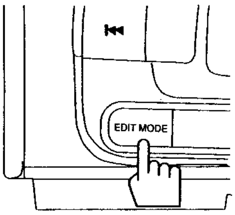
Panoramic Surround:

When the PANORAMIC SURROUND button is pressed, the LED on the button comes on. The angle of the Optional Panoramic shifting speakers will shift in accordance with the DSP modes. To turn off a Panoramic Surround effect, just press the PANORAMIC SURROUND button again. When the LED goes off, so does the Panoramic Surround effect. When you want to cancel the DSP mode, press the DSP button. The LED on the button goes off.

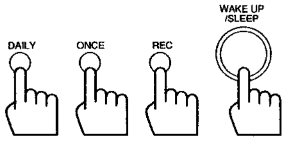
F


TUNER ENTRY
VOLUME

G

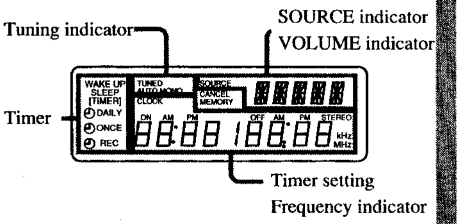


H

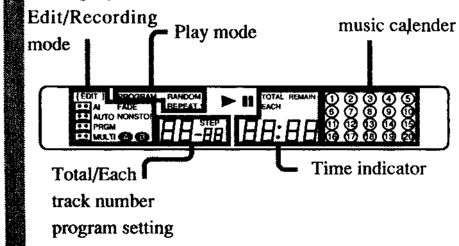

DAILY
ONCE
REC
WAKE UP /SLEEP

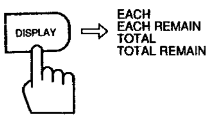
I

Tuner/Amplifier


Tuning indicator
SOURCE indicator
VOLUME indicator
Timer
WAKE UP SLEEP (TIMER)
DAILY
ONCE
REC
TUNED
AUTO MONO
CLOCK
SOURCE
CANCEL
MEMORY
ON AM PM
OFF AM PM STEREO
kHz
MHz
Timer setting
Frequency indicator

CD player


Edit/Recording mode
Play mode
music calender
EDIT
AI
AUTO
PRGM
MULTI
PROGRAM
FADE
NONSTOP
RANDOM
REPEAT
STEP
TOTAL REMAIN
EACH
Total/Each track number program setting
Time indicator


DISPLAY
EACH
EACH REMAIN
TOTAL
TOTAL REMAIN

F. Using the Tuner Entry Function (Tuner/Amplifier)

With Tuner Entry on, the Unit automatically shifts to the most recently played radio station when a tape or CD comes to an end.(See Page 28)

- Press the TUNER ENTRY button. The LED next to it lights up when Tuner Entry is on and is off when Tuner Entry is off.
- In two situations, even if Tuner Entry is on, it will not take effect:
  1) When you intentionally stop the CD or tape deck by pressing the STOP/ CLEAR ■ button on the CD player or the ■ button on the tape deck.
  2) When any timer activated CD or tape stops playing.

G. Using the Edit Functions (CD Player)

By using one of the four Edit Functions, AI Edit, Auto Edit, Program Edit and Multi Edit, the Unit can figure out how to arrange CD tracks on a tape. When you are recording a tape from a CD, the selections are not cut off if the tape ends before the selection does.

H. Using the Timers (Tuner/Amplifier)

The four timers, REC TIMER, ONCE TIMER, DAILY TIMER and WAKE UP/SLEEP TIMER are extremely easy to set so you can really use them.

I. The Display and the LEDs—Two Very Useful Hints

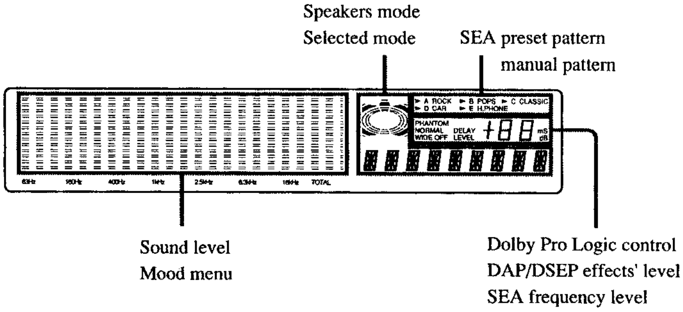
- The display area is large and clear. It's organized so you can tell at a glance what's happening because functions light up as you use them, and blink to tell you when they are ready.
- Some of the controls have a small light, called an LED right next to or even right on the function button or knob itself. The light comes on when the function is on, and goes out when it is not in use.

DIMMER Function (Tuner/Amplifier)

With this function you can control the display brightness, when the Unit is turned off.

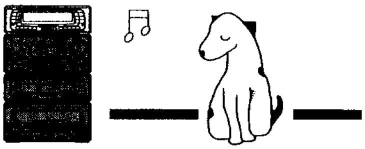
Press the TUNING/TIMER/DIMMER < or > button.
<: makes the display dimmer
>: makes the display brighter

Graphic Equalizer


Speakers mode
Selected mode
SEA preset pattern
manual pattern
A ROCK
B POPS
C CLASSIC
D CAR
E H.PHONE
PHANTOM
NORMAL
WIDE OFF
DELAY
LEVEL
mS
dB
63Hz
160Hz
400Hz
1kHz
2.5kHz
6.3kHz
16kHz
TOTAL
Sound level
Mood menu
Dolby Pro Logic control
DAP/DSEP effects' level
SEA frequency level

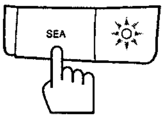
Listening with Headphones
A standard pair of headphones can be connected at the PHONES jack on the front panel. **Be sure to turn down the volume before connecting or putting on headphones, as high volume can damage both the headphones and your hearing.**

Adjusting the Sound

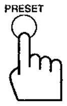


SEA preset patterns: SEA allows you to select one of five pre-programmed sound patterns (preset mode) or to create your own sound patterns (manual mode).

1

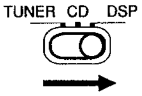


2

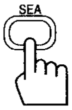


From the Remote

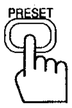
1



2



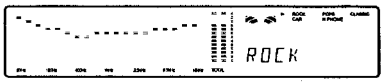
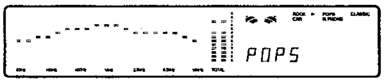
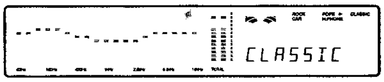
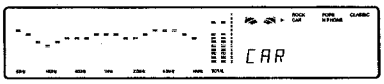
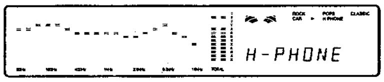
3



Using the SEA Preset Patterns

1. **Press the SEA button (or simply press the PRESET button).**
   The LED next to it comes on.

2. **Press the PRESET button to select the SEA preset pattern you want.**
   Each time you press the PRESET button, the display changes from one pattern to the next as shown below.

ROCK	Increases both treble and bass sounds. 
POPS	Increases the richness and fullness of the vocal sound. 
CLASSIC	Adds depth and brilliance to the sound. 
CAR	For recording onto car stereo tapes. 
H.PHONE	For recording onto headphone stereo tapes. 

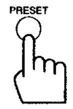
You can also use the Remote to select the SEA patterns.

1. Set the TUNER/CD/DSP selector to the DSP position.
2. Press the SEA button to enter the SEA mode.
3. Press the PRESET button to select the SEA pattern.

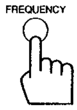
To cancel the SEA effect, press the SEA button (or the SEA ON/OFF button on the Remote) again.

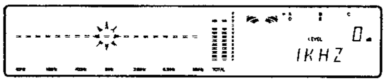
To get back the cancelled effect, select the cancelled pattern again.

1

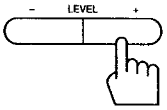


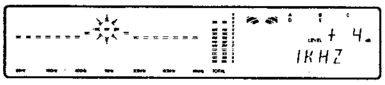
2





3





Creating Your own SEA Patterns

1. **Press the PRESET button to select the manual mode.**
   The LED next to it lights up.

2. **Press the FREQUENCY button to set the frequency range to be changed.**
   The frequency range level bar on the display will blink.
   Each time you press the FREQUENCY button, the frequency range changes up or down. While it is blinking you can set the frequency level.

3. **Press the – LEVEL + button to set the level,while the selected frequency range level bar is blinking.**

4. **Repeat steps 2 and 3 to adjust other frequency ranges.**
   You can adjust 7 frequency ranges.

Note
Although the five SEA preset patterns cannot be changed, an individual sound pattern can be created based on a preset pattern. When you make any change to the SEA preset pattern, the Unit automatically enters the manual mode so you can modify and store the pattern you create.

To store the pattern

1. Press the MEMORY button after creating your own SEA pattern.
   Whole ranges on the display will blink.

2. While the ranges are blinking, press the PRESET button to select the memory MANUAL A, B, C, D, or E.

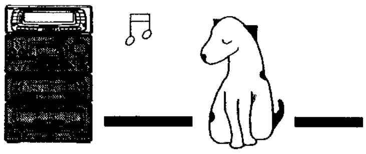
3. Press the MEMORY button again to store the pattern in memory.
   When the pattern appears on the display, it is now stored.

Recording the SEA Sound Pattern

To record sound together with a SEA sound pattern (either a preset or manual one), first turn on SEA and select the desired sound pattern. The music will be enhanced according to the pattern you selected. SEA sound patterns cannot be applied to the following types of recording:

- A song cannot be dubbed (at either normal or high speeds)with a SEA sound pattern.
- When the amplifier's SOURCE DIRECT is ON, songs cannot be recorded with a SEA sound pattern.

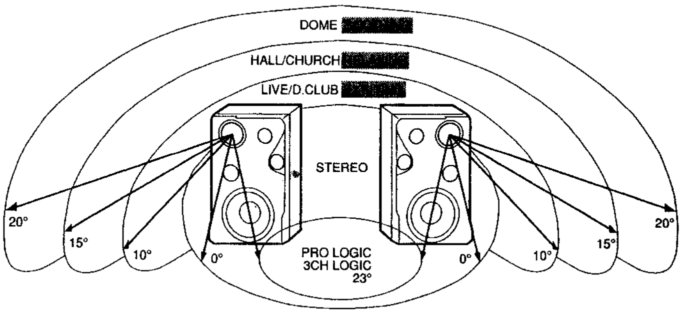
Using DSP (Digital Signal Processor) Programs



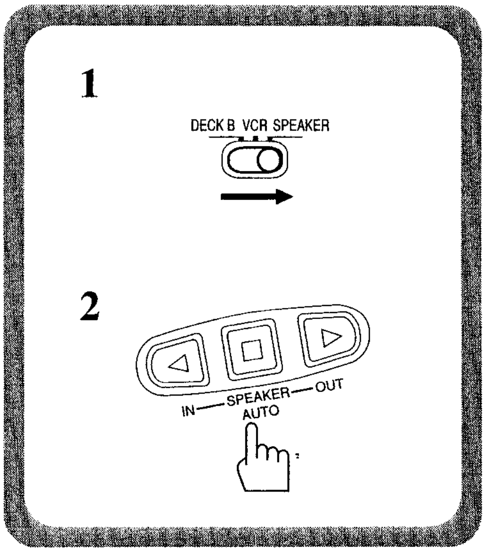
You can use Dolby Pro Logic mode or 3ch Logic mode. You can use these two modes either with or without a single center speaker. When using without a center speaker, you can change the panoramic shifting speakers inside the cabinet to function like the center speaker. The speakers shift according to the respective DAP program.

Changing the Speaker Angle

The CA-MXG9BK has 12 DSP programs: Dolby Pro Logic, Dolby 3ch Logic, DAP Programs (D.CLUB, LIVE, DOME, HALL, CHURCH), DSEP Programs (SQUEEZE, VOCAL MASKING, KEY CONTROL, SCRATCH, FLANGER). With these programs and the panoramic shifting speakers (Optional) the sound field can be enlarged to give a more realistic sound. You can choose the sound atmospheres from the following DSP programs.



Notes
- *Panoramic shifting speakers inside the cabinet will shift corresponding to the respective DAP mode. The speakers shift automatically inward or outward to give you the dynamic sound fields. The mode can be set from either the Unit or the Remote.*
- *In the Dolby Pro Logic mode, the speakers will shift inward to give a same effect as if you are using a center speaker and make the spoken words easier to hear.*
- *Normally, the speakers face directly forward.*



To change the speaker angle from the Remote.

1. **Set the DECK B/VCR/SPEAKER selector to the SPEAKER position.**
2. **Press the IN/OUT button to change the angle.**
   The indicator will blink to indicate the speaker's direction of movement.

- Press the IN button to shift the speakers inward.
- Press the OUT button to shift the speakers outward.
- Press the AUTO button to shift the speakers automatically in accordance with the DSP program selected.
  When you change the angle of the speakers by using the IN or OUT button, the last selected angle is memorized. To cancel the memorized speaker angle, press the AUTO button.

Notes
- *You can apply DAP modes when you record.*
- *A sound cannot be dubbed with the DAP modes (at either normal or high speeds).*

To cancel Panoramic Surround mode

You can turn off Panoramic Surround mode from either the main Unit or the Remote. Just press the PANORAMIC SURROUND or DSP button.
ON: the indicator on the main Unit lights up.
OFF: the indicator on the main Unit goes off.

Dolby Pro Logic

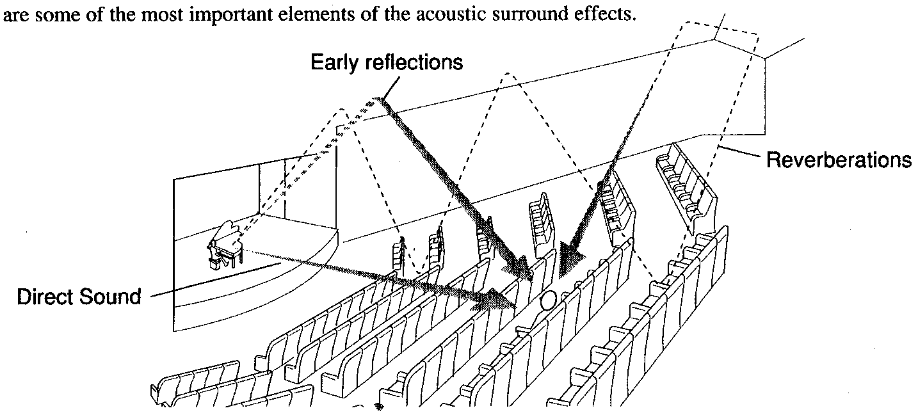
DOLBY PRO LOGIC: By connecting the optional rear speakers (SP-ES5BK) the sound reflections and the reverberations enhance the effect of movement, so you can feel as if you were in the actual scene.
DOLBY 3CH LOGIC: Select this mode when you are not using the rear speakers.
Try listening to the source in various sound modes. By using the Remote you can stand back and hear the sound differences as you change modes.
By altering the settings of the following three modes you can adjust the sound to suit speaker size and the acoustic conditions of the room.

- CENTER MODE (PHANTOM/NORMAL/WIDE/OFF): When you use the DOLBY 3CH LOGIC mode, only NORMAL, WIDE, or OFF appear on the display.
- DELAY TIME (PRO LOGIC only)
- TEST TONE (CENTER LEVEL –∞, –12 ~ +6dB), (SURROUND LEVEL –∞, –12 ~ +6dB): On the display, –∞ is indicated as "---".

In Dolby Pro Logic mode, the panoramic shifting speakers shift inwards pointing the center. Accordingly, they give you the same effect as if you are using a single center speaker. When you also want to hear the sound from the center speaker, you can connect a conventional center speaker to the terminal on the rear of the CA-MXG9BK.
Once you have set the mode, you can enter in the mode directly every time you want to enjoy the Dolby sound, as long as you don't change the speakers or the listening room.
The soundtracks of video software bearing the DOLBY SURROUND mark* include the same encoded surround information as found in Dolby Stereo films. The Dolby Pro Logic Surround decoder is a consumer version of the decoding process used in professional Dolby Stereo equipment, which lets you recreate the theater ambience and effects of Dolby Stereo at home.

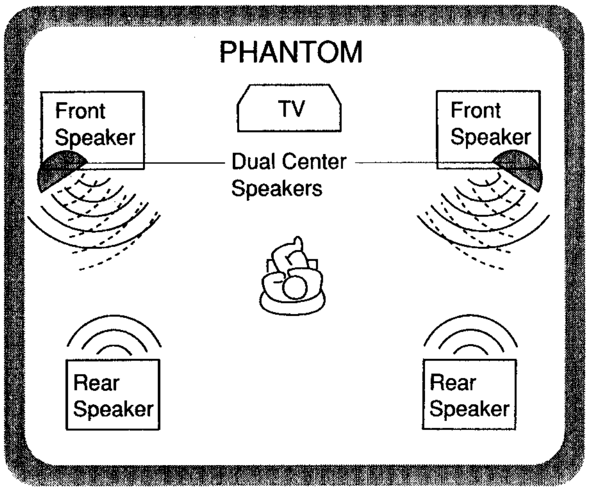
* *Manufactured under license from Dolby Laboratories Licensing Corporation. DOLBY and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.*

The sound heard in a concert hall or a movie theater consists of direct sound and indirect sound: early reflections and reverberations. The reflected sound and the reverberative sound are always delayed by the distances of the ceiling, walls from the listener. The early reflections and reverberations are some of the most important elements of the acoustic surround effects.

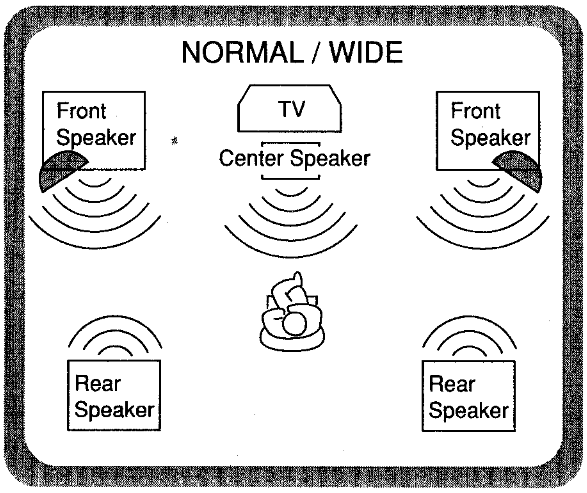

Early reflections
Reverberations
Direct Sound

In addition to the Front Speakers and Rear Speakers, a center speaker is required for the optimum surround effect of the Dolby Pro Logic system. When you use a video or other sound source processed with the Dolby surround system labeled with the DOLBY SURROUND, set the center speaker in front of the TV. However, even if without a center speaker, you can use the PHANTOM mode within the DOLBY PRO LOGIC mode and the panoramic shifting speakers will reproduce the center speaker effect.
The following illustrations show how the CA-MXG9BK can give you the optimum sound environment by selecting the various sound modes and speaker arrangements. Try to find the speaker direction and location to create the optimum sound field.

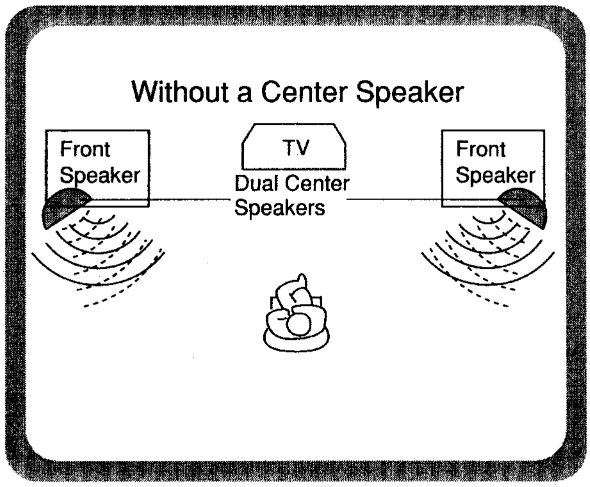
DOLBY PRO LOGIC
(Front Dual Center Speaker)


PHANTOM
Front Speaker
TV
Front Speaker
Dual Center Speakers
Rear Speaker
Rear Speaker

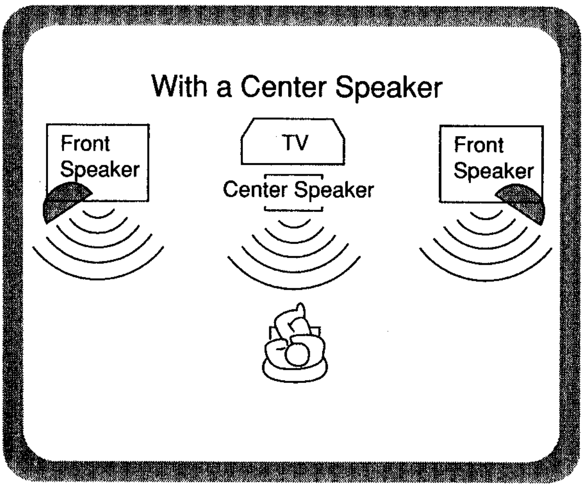
DOLBY PRO LOGIC
(Separate Center Speaker)

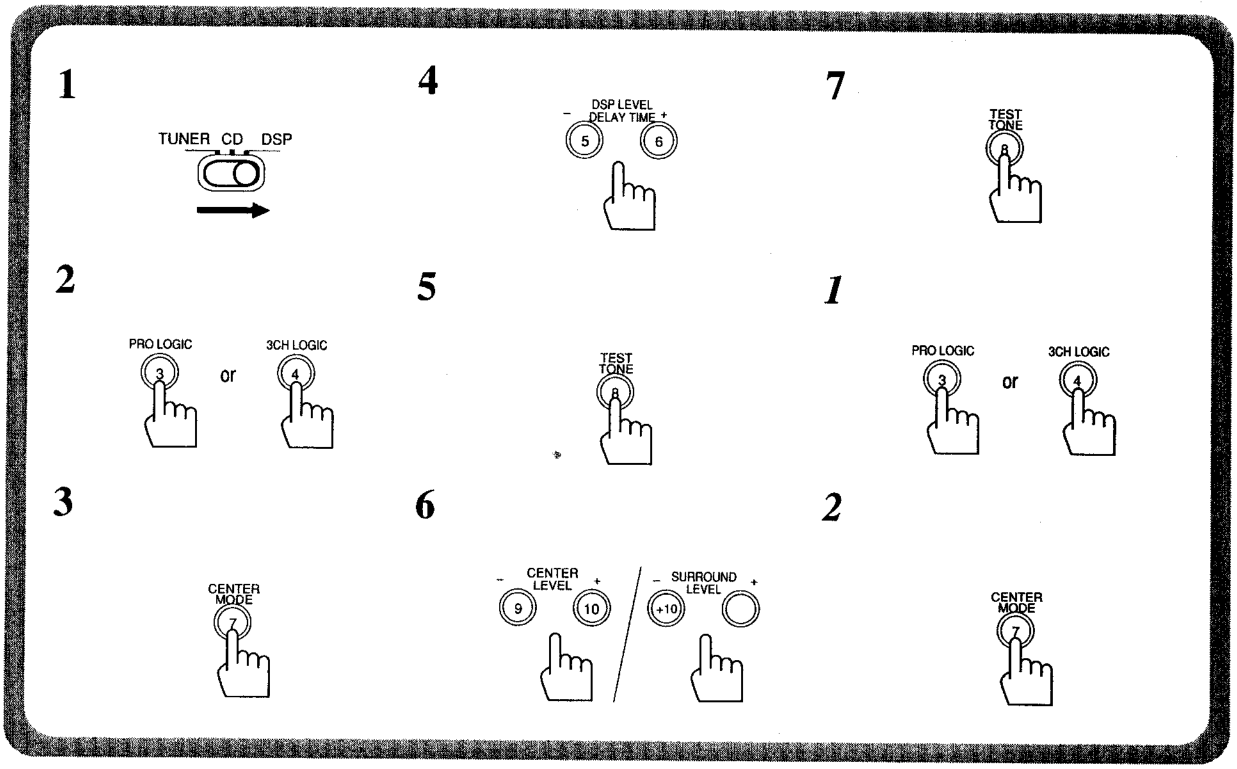

NORMAL / WIDE
Front Speaker
TV
Front Speaker
Center Speaker
Rear Speaker
Rear Speaker

DOLBY 3CH LOGIC
(Front Dual Center Speaker)


Without a Center Speaker
Front Speaker
TV
Front Speaker
Dual Center Speakers

DOLBY 3CH LOGIC
(Separate Center Spaker)


With a Center Speaker
Front Speaker
TV
Front Speaker
Center Speaker



PREPARATION FOR USING DOLBY PRO LOGIC

1. **Set the TUNER/CD/DSP selector on the Remote to the DSP position.**

2. **Press the PRO LOGIC or the 3CH LOGIC button to set the mode.**
   When you use the surround speakers, press the PRO LOGIC button.

3. **Press the CENTER MODE button.**
   Each time you press the CENTER MODE button,the mode changes as follows.

PHANTOM	Select this mode when you don't use the center speaker.
NORMAL	Select this mode when you use the small size center speaker.
WIDE	Select this mode when the size of the center speaker is same as the that of the main speakers.
OFF	You can shut off the output of the center channel signal.

- Select the NORMAL mode when you use the panoramic shifting speakers (optional).
- Press the 4CH/SEP.C button (the indicator lights up) to set the separate center mode when you use other center speaker separately than panoramic shifting speakers (optional).

4. **Press the –DELAY TIME+ button to set the delay time of the speakers' output.**
   You can adjust the delay time every 1ms between 15ms and 30ms.

- When the surround speaker is located far from your listening position as compared to that of the mainspeakers, you can set the delay time of the sound from the surround speakers.

ex.

Distance	Set to
far	15ms
same	20ms
near	30ms

5. **Press the TEST TONE button to check your setting.**
   When you press the button, the mode changes automatically as follows , and you can check the tone from each speaker.

→ LEFT(Main) → CENTER → RIGHT(Main) → SURROUND ←

6. **Press the –CENTER LEVEL+ button to set the sound level of the main speakers.**
   Press the –SURROUND LEVEL+ button to set the sound level of the surround speakers.

- Set each sound level from the main and surround speakers to the same level.

  - You cannot set the surround level when you select the 3CH LOGIC mode.
  - You cannot set the center level when you select the PHANTOM or OFF mode of the CENTER MODE.

7. **Press the TEST TONE button to finish the preparation.**
   The test tone shuts off.

Now you can use the Dolby Pro Logic mode. Let's listen to the sound effect!

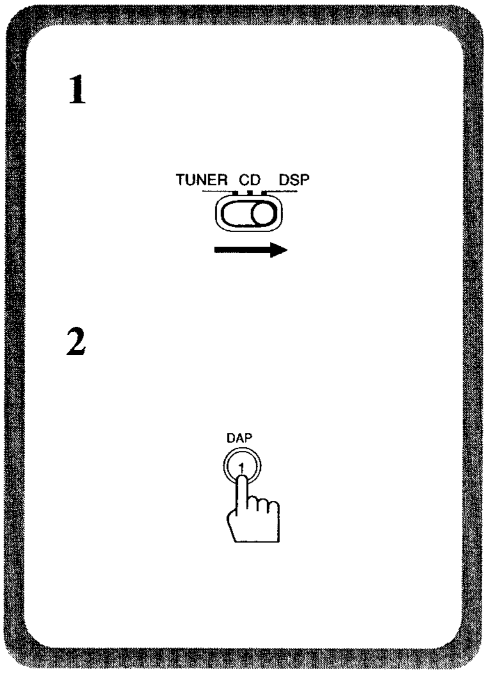
1. ***Press either the PRO LOGIC or 3CH LOGIC button.***

2. ***Press the CENTER MODE button.***

3. ***Play a sound source processed with the Dolby Surround System on which the DD DOLBY SURROUND mark is labeled.***
   The panoramic shifting speakers will shift inward to reproduce realistic voice and sound effects.

DAP (Digiral Acoustic Processor) Mode

A room has its own pattern of reflections and reverbrations determined by its size, the height of the ceiling, construction and other factors. In the DAP mode, sound from the speakers reflects from the walls and ceiling, enveloping you with spatial sounds from random directions. With five DAP modes the sound field can be enlarged to give a more realistic atmosphere without adding rear speakers.



The Remote is very useful for making this setting.

1. **Set the TUNER/CD/DSP selector to the DSP position.**

2. **Press the DAP button to select the mode.**
   Each time you press the DAP button, the mode changes as follws.

D. CLUB	gives a throbbing bass beat.
LIVE	gives the feeling of a live stage.
DOME	gives the spacious feeling of a domed stadium.
HALL	gives clear vocals and the feeling of a recital hall.
CHURCH	reproduces the echo effect of a stone-walled church.

(When you use the main unit, just press the desired DAP mode button directly.)

To change the depth of effects

Press the –DSP LEVEL+ button on the Remote. You can change the depth level every 1dB between –6dB and +6dB. 0dB is the normal level.

+: the level is increased.
–: the level is decreased.

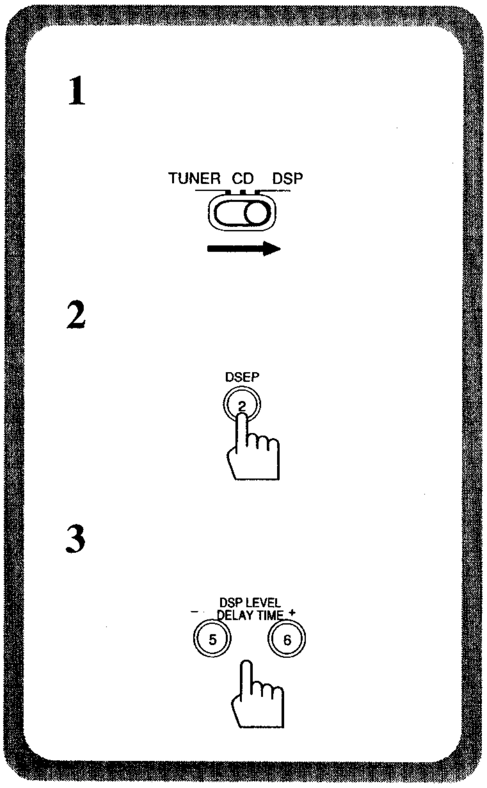
When you use the rear speakers

Press the 4CH/SEP.C button.
The LED next to it lights up.

Although you can reproduce the sound with a DAP or DSEP effect by using only the front speakers, adding the optional rear speakers will enhance the effect. (In this case, the panoramic shifting speakers turn off.)

DSEP (Digital Special Effects Processor) Mode

With five DSEP modes a powerful sound can be reproduced.
The panoramic shifting speakers inside the cabinet shift to face directly forward in alignment with the full-range speakers directly below.The mode can be set either on the Unit or from the Remote.



The Remote is very useful for making this setting.

1. **Set the TUNER/CD/DSP selector to the DSP position.**

2. **Press the DSEP button to select the DSEP mode.**

SQUEEZE	gives clear and realistic vocal sound
VOC MASK	the singers voice in the sound source is reduced.
KEY CTRL	you can freely change the tone level.
SCRATCH	creates scratching noise while you press and hold the button.
FLANGER	gives a sound like a dynamic parallel wave.

(When you use the main unit, just press the desired DSEP mode button directly.)

3. **Press the –DSP LEVEL+ button to change the sound level.**

SQUEEZE:	5 level (–2 ~ +2)
VOC MASK:	13 level (–6 ~ +6)
KEY CTRL:	13 level (–6 ~ +6)
SCRATCH:	(–1 and +1)
FLANGER:	5 level (–2 ~ +2)

Notes on the DAP and DSEP programs

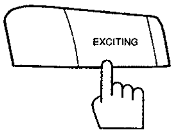
- *When 4CH/SEP.C is ON, the sound is recorded with DAP or DSEP effect.*
- *When 4CH/SEP.C is ON, you can not dub with either Normal speed or High speed.*
- *When you use the DAP or DSEP effect by using the headphone, turn the 4CH/SEP.C ON.*

Special Sound Adjustment

Mood Menu

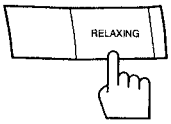
The Mood Menu allows you to select one of four special effect sound modes. Selecting a mode will set the respective SEA pattern, DSP programs, and panoramic shifting speaker angle automatically. The individual mode allows you to store your own settings in memory.

EXCITING (1~3)



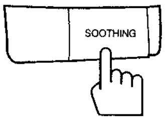
→ EXCITING1 → EXCITING2 → EXCITING3

RELAXING (1~3)



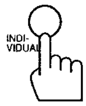
→ RELAXING1 → RELAXING2 → RELAXING3

SOOTHING (1~3)



→ SOOTHING1 → SOOTHING2 → SOOTHING3

INDIVIDUAL



EXCITING (1~3)

Press the EXCITING button.

Regardless of the music source, a sharp, upbeat sound is produced. Each time you press the button, the depth of the effect changes among 3 grades.

RELAXING (1~3)

Press the RELAXING button.

A beautiful, subtle sound is obtained. The sound feels like a refreshing breeze which gives a relaxed feeling.

Each time you press the button, the depth of the effect changes among 3 grades.

SOOTHING (1~3)

Press the SOOTHING button.

By controlling the dynamic range, a rich, easy listening sound can be maintained. Low-volume sounds drowned out by larger-volume sounds are boosted and peak sounds are suppressed.

Each time you press the button, the depth of the effect changes among 3 grades.

INDIVIDUAL

Press the INDIVIDUAL button so that the stored setting is called up.

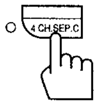
You can use the individual mode to create your own customized sound effect by combinating one of the DSP programs (Dolby Pro Logic , DAP, and DSEP) and one of the SEA patterns. The individual mode settings can be stored in memory.

Notes

- *Do not keep the INDIVIDUAL button pressed to call up the stored setting; otherwise, you may store a new setting rather than calling up the previous one (see below).*
- *When you store only the SEA MANUAL pattern, the display shows only the MANUAL indicator.*
- *When you press the SOOTHING button, the LED on the PANORAMIC SURROUND button goes off.*

To store your own customized DSP mode into the INDIVIDUAL mode

1. Select the desired DSP mode. (See page 13–16)
2. Adjust the frequency range.(See page 12)
3. Press and hold the INDIVIDUAL button to store your own pattern.



Using 4CH/SEP. C (4 Channel Separate Center)

With the 4CH/SEP. C button, you can control the following settings.

- Setting the 4CH (front and rear speakers) or 2CH (front speakers only) in the DAP mode.
- Setting the separate center in the Dolby Pro Logic mode.
- Recording the source with a DAP or DSEP effect.

Press the 4CH/SEP. C button.

The LED next to it lights up.

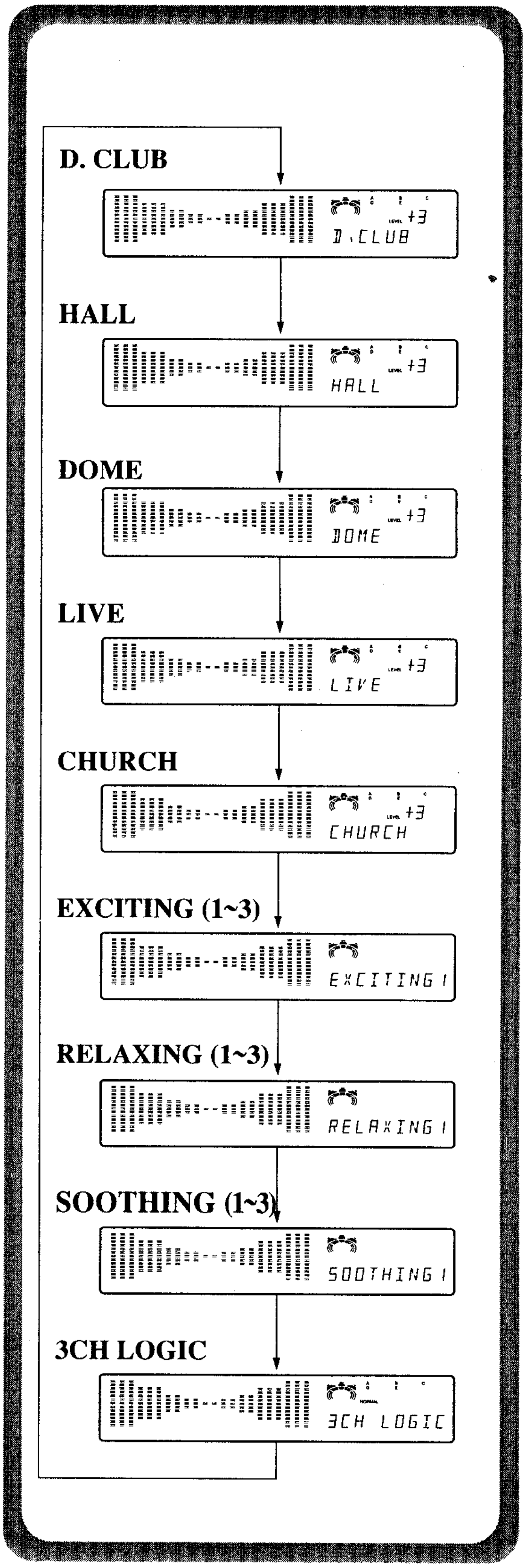
1) You can use the 4 channel (front and rear speakers) effect by connecting optional rear speakers.
2) By connecting the optional center speaker, you can use it separate mode in the Dolby Pro Logic mode.
3) You can record any source with either the DAP or DSEP effect. But remember, you can not use both effects at the same time.

To cancel the 4CH/SEP. C mode, press the 4CH/SEP. C button again.

The LED goes off.

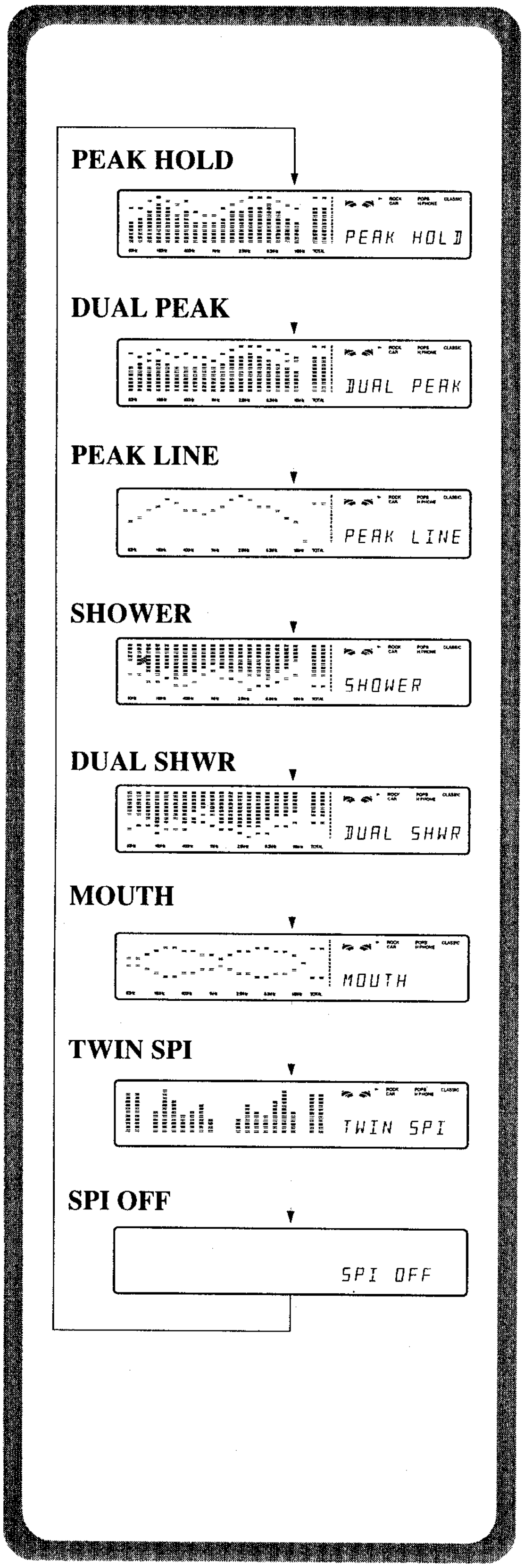
DEMO

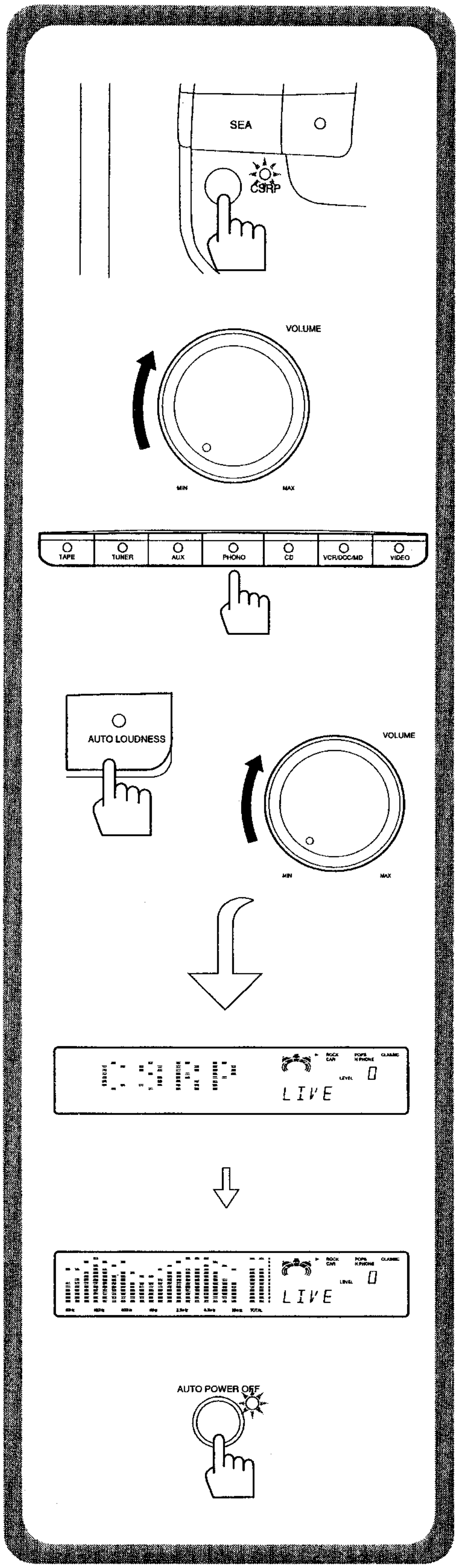
Use the DEMO function to try the various sound modes for a song. During play, press DEMO button.
9 sound patterns cycle automatically.
To cancel the DEMO function, press the DEMO button again.


D. CLUB
+3
D.CLUB
HALL
+3
HALL
DOME
+3
DOME
LIVE
+3
LIVE
CHURCH
+3
CHURCH
EXCITING (1~3)
EXCITING 1
RELAXING (1~3)
RELAXING 1
SOOTHING (1~3)
SOOTHING 1
3CH LOGIC
3CH LOGIC

DISPLAY

The display shows the status of each frequency band of the sound. During play, press the DISPLAY button. Each time you press the button, the display shows the various sound patterns.
DUAL PEAK and DUAL SHOWER show also the SEA pattern simultaneously.


PEAK HOLD
PEAK HOLD
DUAL PEAK
DUAL PEAK
PEAK LINE
PEAK LINE
SHOWER
SHOWER
DUAL SHWR
DUAL SHWR
MOUTH
MOUTH
TWIN SPI
TWIN SPI
SPI OFF
SPI OFF



Page 19

CSRP (COMPU LINK SOURCE RELATED PRESET SYSTEM) Function

CSRP is the electronic feature that presets volume, display mode and other control functions. The CA-MXG9BK has four CSRP functions; Volume CSRP, Time Link CSRP, AUTO LOUDNESS, AUTO POWER OFF, which allow you to set the desired listening environments.

Volume CSRP

Just by pressing the CSRP button (the CSRP indicator lights up). When you turn off the Unit, the VOLUME control is automatically turned down. When you turn on the Unit,the VOLUME control is automatically set to around the most recently used level.

Time Link CSRP

While the CSRP indicator is lit, Time Link CSRP allows you to store the following items into the CSRP memory automatically. See the following example.

- Volume
- DSP mode
- SEA preset patterns
- Display mode

These four items are stored for each source and for each time range.

** There are four time ranges; 6:00~, 12:00~, 18:00~ and 24:00~.*

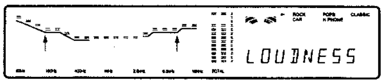
To call up the Time Link CSRP

1. Press the CSRP button.
   The LED next to it lights up.
2. Select the sources.

AUTO LOUDNESS

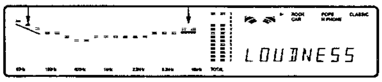
When the AUTO LOUDNESS button is pressed (the indicator on it lights up), the SEA characteristic will change in accordance with the volume level. This means that at low volume, insufficient bass and treble are automatically compensated for, so you can have a full sound at any volume level.

Low volume level



The bass and treble are automatically increased.

High volume level



The setting approaches the normal preset pattern.

AUTO POWER OFF

You can fall asleep to music while listening to CD or tape. The CA-MXG9BK will turn off by itself rather than play all night.

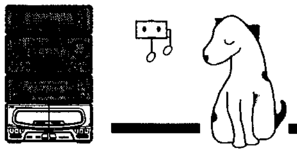
Press the AUTO POWER OFF button while listening to CD or tape.

When CD or tape play is over, the Unit will automatically turn off.

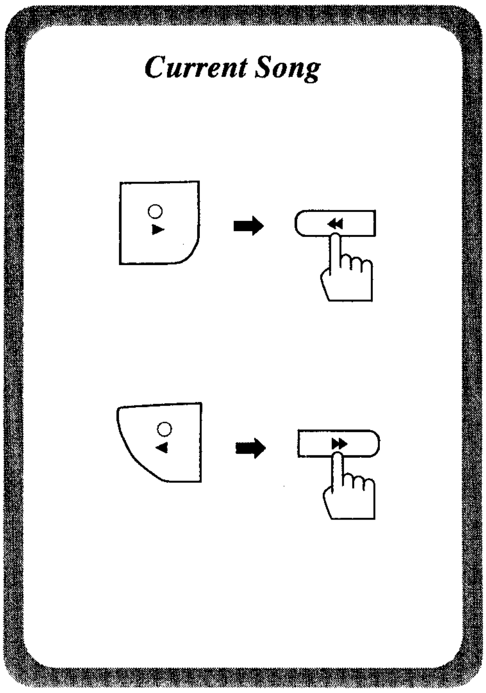
Notes

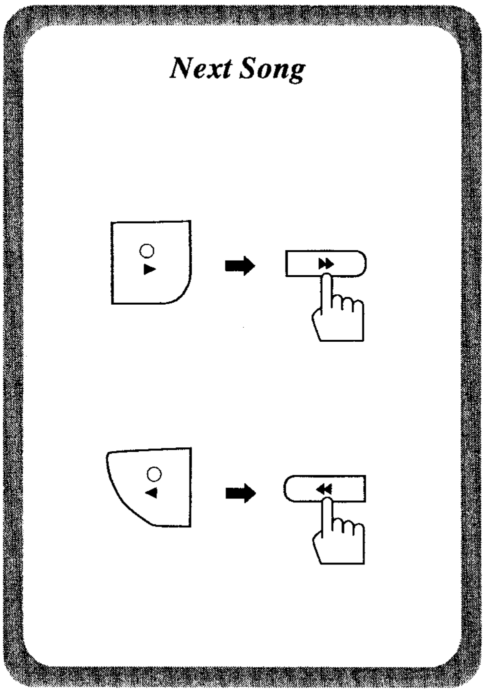
- *The repeat function of CD player does not work with AUTO POWER OFF.*
- *The Tuner Entry (see page 28) does not work with AUTO POWER OFF.*
- *Ending of tape play depends on the REVERSE MODE setting.*
  Tape play ends either after one side is played or after both sides are played.

Playing Tapes



If there are 4-second or longer blanks between tracks on recorded tapes, you can use the Music Scan feature to find the beginning of a track. (For simple playback procedures, see page 7 of the Easy Guide section.)





Music Scan (Finding Songs)

To find the beginning of a music track use the Music Scan feature. Music Scan searches for blank portions that usually separates tracks, then plays the next track.

Finding the Beginning of the current song

Press the ◀◀ or ▶▶ button during play.

Make sure you press the ◀◀ or ▶▶ button in the opposite direction to tape play. Searching stops automatically at the beginning of the current song, and the current song starts automatically.

Finding the Beginning of the next song

Press the ◀◀ or ▶▶ button during play.

Make sure you press the ◀◀ or ▶▶ button in the same direction to tape play. Searching stops automatically at the beginning of the next song, and the next song starts automatically.

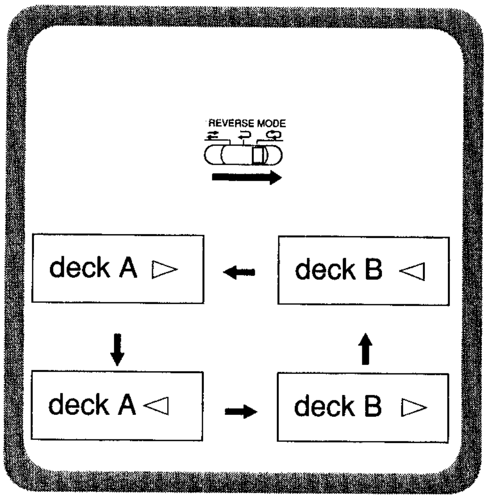
Notes

The Music Scan feature works by detecting a 4 second blank at the beginning of each selection, so it won't work well if your tape has:

- *No blank at the beginning of a track.*
- *Noise (often caused by much used or poor quality dubbing) which fills the blank with noise.*
- *Long very soft passages or pauses in a selection. Music Scan will detect these instead of the 4 second blanks. If this happens, just go ahead with Music Scan again until you reach the selection you want.*

Music Scan only works on one tape at a time.

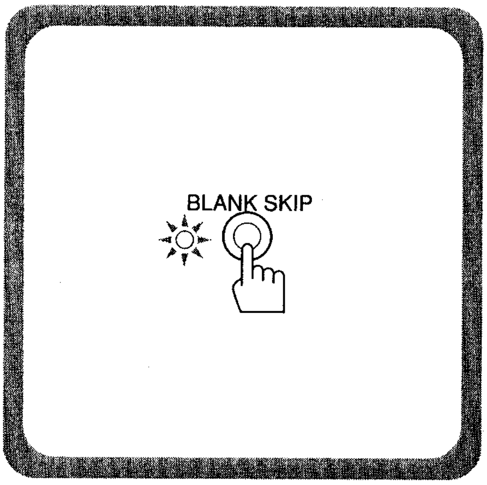
- *If you perform the Music Scan on deck A during recording on deck B, deck B enters recording pause mode.*
- *If you start recording on deck B while Music Scan is performed on deck A, Music Scan is stopped.*



Using Continuous Play

When you play tapes, you can select the side to be played by using the REVERSE MODE selector.

⇄ : only one side is played
⊃ : both sides are played
⟲ : both sides are played repeatedly.
When tapes are in both decks, continuous play follows the sequence at the left regardless where playback starts.
The sequence is repeated endlessly.

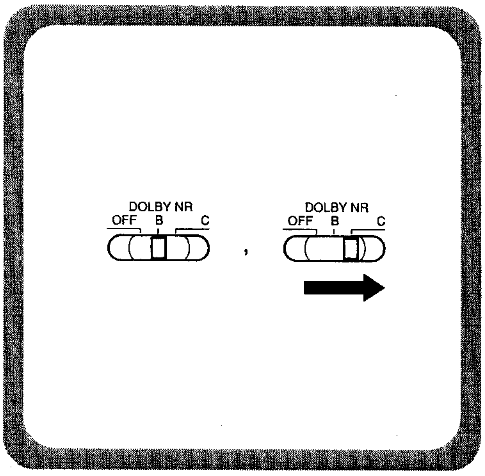


Skipping Blank Portions during Playback

If there is a blank portion of 10 seconds or longer on a tape, the Unit will automatically fast forward, and skip the blank portion, then play back the next track.

Press the BLANK SKIP button before or during play.
The LED next to it lights up.

To cancel the blank skip playback
Press the BLANK SKIP button again.
The LED next to it goes off.



*Using the DOLBY NR * selector*

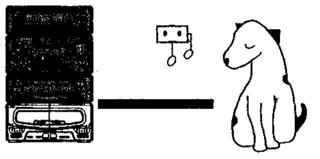
To play a tape recorded with the Dolby Noise Reduction effect, set the DOLBY NR selector to the same NR system (DOLBY B NR or DOLBY C NR) as was used when recording.
If a tape is recorded with the Dolby NR system, playing it back with the same Dolby NR system will reduce tape hiss and improve the clarity of the sound.

Note:
Dolby NR is inactive in dubbing mode regardless of the setting of the NR switch. The dubbed tape automatically contains the same processing as the source tape.

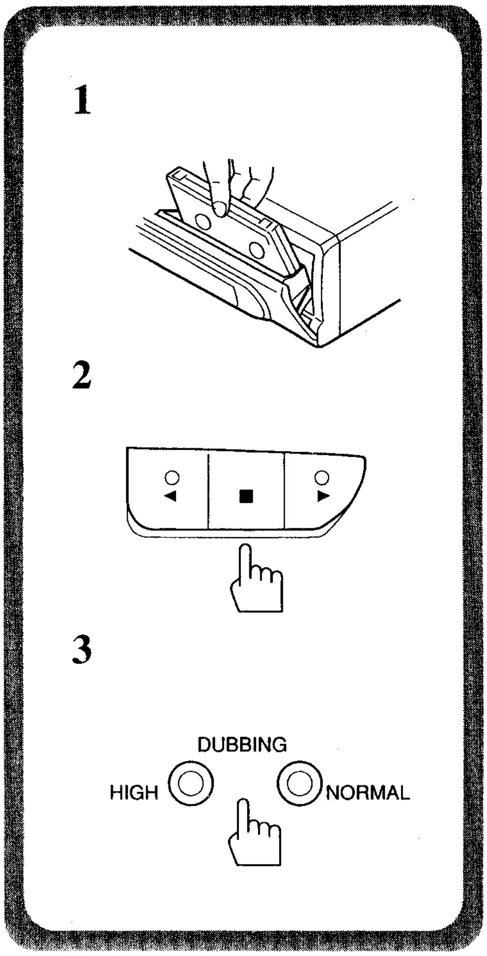
---

* *Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen. "DOLBY", the double-D symbol, and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.*

Recording onto Tape



Recording from one tape to another is called dubbing.
You can dub at regular speed for highest quality, or at high speed with a slight loss in sound quality.
With high speed it takes only about one-half the time to copy a tape. For regular recording procedure, see page 8 of the Easy Guide section.



High Speed Dubbing or Normal Speed Dubbing

Although the quality of the dubbed tape is a little less, high speed dubbing is a very convenient way to record from one tape to another.
You can only use deck B to make recordings. Deck A is for playback only.

1. **Put the tape you want to copy *from* into deck A, and the tape to be copied *onto* in deck B.**

2. **On both decks, press either the ◄ or ► button while pressing the ■ button, in order to select the playing and recording side.**

3. **Press either the DUBBING HIGH or the DUBBING NORMAL button.**

Note
During dubbing, you can also listen to another source such as the radio or the CD player, just as if you weren't dubbing.
- *The sound cannot be dubbed with SEA sound patterns and DSP effect.*
- *During dubbing, when you press the AUTO POWER OFF button, the Unit automatically turns off after dubbing is over.*

To dubb on both sides
Set the REVERSE MODE selector to either ⊃ or ⊂⊃. Dubbing starts from the ▷ front side of both deck A and B.

Recording selections from several different tapes

When you want to take selections from several different tapes and combine them on one tape during dubbing, follow these steps:

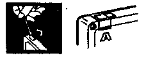
1. Press the ■ button on deck A.
   This causes deck A to stop, so you can change tapes, and deck B makes a 4 second blank and pauses.

2. Change the tape in deck A.

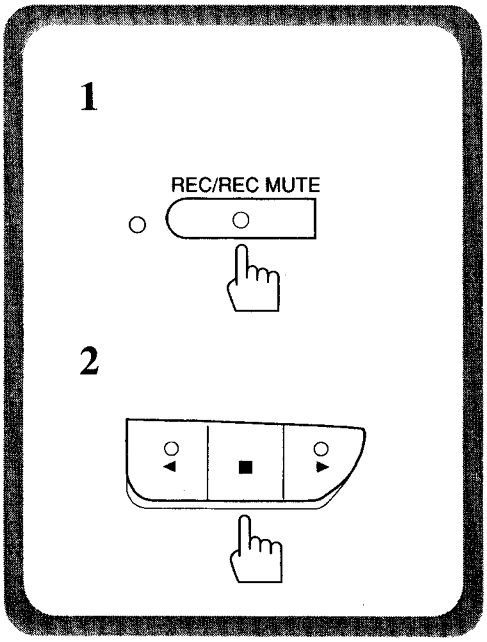
3. Press either the DUBBING HIGH or NORMAL button (the same one you are using now) to start deck A playing and deck B recording again.

Things to know before start recording

- It may be unlawful to record or playback copyrighted material without the consent of the copyright owner.
- Cassettes have a special feature so you won't accidentally record over a tape you want to save. Two small tabs on the back, one for side A and one for side B, can be removed to prevent erasure or re-recording. To record on a cassette with the tabs removed, you must cover the holes with tape first. However, when a Type II tape is used, only cover part of the hole as shown below, since the other part of the hole is used to detect the tape type.



- Type I, II and type IV tapes can be used for recording.
- If recordings you make have excessive noise or static, the Unit may be too close to a TV which was on during the recording. Either turn off the TV or increase the distance between the TV and the CA-MXG9BK.

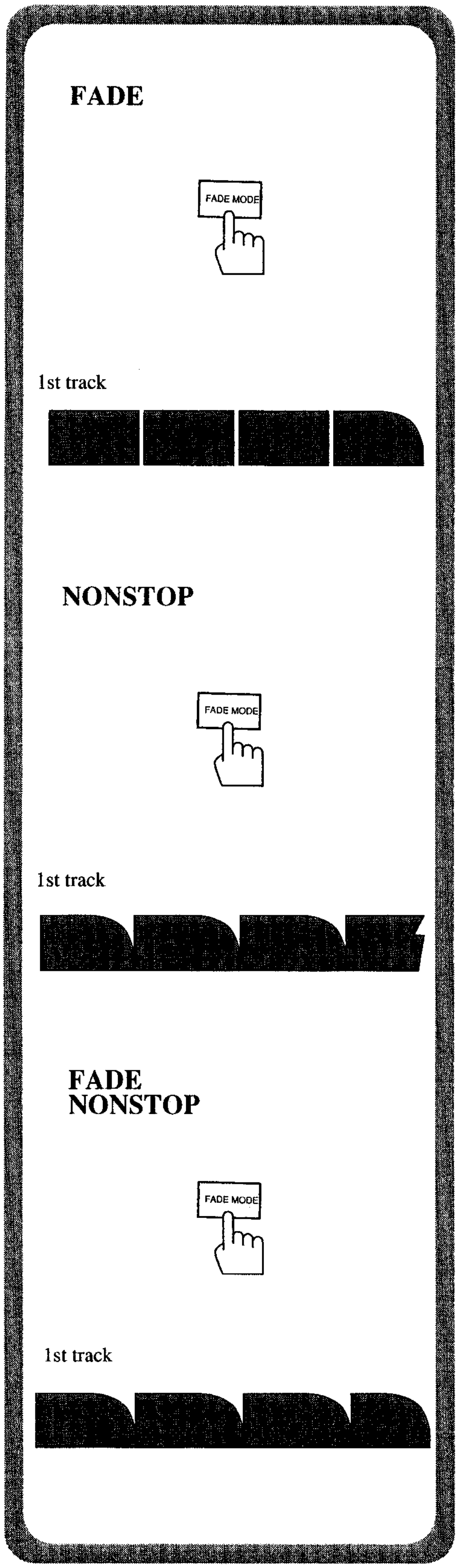


Making a 4-second Blank on a Recorded Tape

1. **Press the REC/REC MUTE ○ button during play.**
   The LED next to it blinks for 4 seconds and deck B enters recording pause mode.

To make a blank portion longer than 4 seconds, keep the button pressed for the length of time you want the blank to be.
When the button is released, deck B enters recording pause mode.

2. **Press the ◄ or ► button to restart recording.**



Recording from CD - Fuzzy CD Recording

Since the CA-MXG9BK provides 3 types of Fade modes and 4 types of CD Editing modes, you can make a variety of CD recordings by combining these 7 modes.

Using the Fade Mode

There are 3 types of Fade mode; FADE, NONSTOP, FADE NONSTOP (a combination of NONSTOP and FADE).
Each time you press the FADE MODE button, the Fade mode changes in the following sequence.

FADE→NONSTOP→FADE,NONSTOP→OFF

(You will see these changes on the CD display)

FADE : At the end of the tape, the CA-MXG9BK automatically goes back to the beginning of the last selection and re-records it, this time gently fading out at the end.

- If you have set the REVERSE MODE to ⊃ or ⊂⊃ , side B starts recording at the beginning of the last track on side A. So you get the whole selection, even though part of it was cut off when the tape ran out on side A.

NONSTOP: Every track ends by fading out, and the next track starts as soon as fading-out is over. Thus, you can make a tape with no blank portions between selections. At the end of the tape, however, this mode does not make the end of the track fade out, if the selection is cut off when the tape runs out.

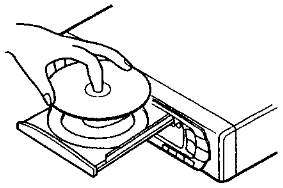
FADE
NONSTOP: Using this mode you can record the entire tape without any blanks. Every track ends by fading out, and at the end of the tape, the last selection fades out instead of cutting off abruptly when the tape runs out, just like FADE.

- If you have set the REVERSE MODE to ⊃ or ⊂⊃, side B starts recording at the beginning of the last track on side A.

Note
NONSTOP and FADE NONSTOP modes cannot be used with the MULTI EDIT mode (see page 25).

Recording with special effects
When you start recording with Fuzzy CD Recording or Auto Edit, the special effects cannot be changed without stopping recording, and often having to start over. If you need different sound effects for each selection, use the standard recording features described in the Easy Guide section.

1



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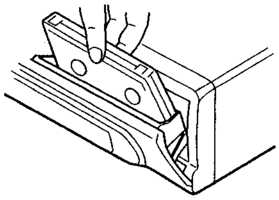
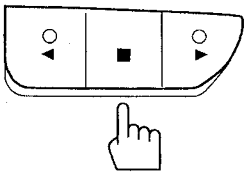


3



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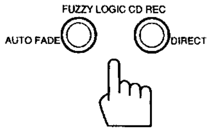


What is Fuzzy CD Recording?

If the recording level is too high, distortion will result; On the other hand, if the recording level is too low, the sound volume will be low. So, it is very important to check the peak level of the source tracks before recording. Furthermore, it is necessary to check the tracks' overall level. With the Fuzzy CD Recording feature, if the tracks' overall level is high, the recording level will be set lower, and, if the tracks' overall level is low, the recording level will be set higher. In this way, the optimum recording level is set according to the sound inclination of the tracks as well as the peak level. The conventional peak search function does not take into account the tracks' overall balance when setting the recording level; therefore, the recording level tended to be low. Fuzzy CD Recording gives a balanced recording level which matches different kinds of tracks.

Fuzzy CD Recording

1. **Load a CD in the tray.**
2. **Put a tape in deck B.**
3. **Select the side to record on, by pressing either the ◄ or ► button while pressing the ■ button on deck B.**
4. **Press either FUZZY LOGIC CD REC AUTO FADE or DIRECT button.**
   The tape starts recording 10 seconds before the CD starts, making a 10 second blank at the beginning of the tape to insure the entire selection is recorded.

- If the last recorded track cannot fit on side A, it will be re-recorded with fade-out.
- When REVERSE MODE is set to either ⊐ or ⊂⊃, side B recording will start after a blank portion of 10 seconds is made. The recording will continue with the last track recorded with a fade-out on side A.
- The last track on side B will end by fading-out.
- If the inserted tape has not been rewound, it will be rewound automatically before recording begins.

To stop recording

Press the ■ button on deck B or the STOP/CLEAR ■ button on the CD player.

Note

The tracks can be recorded with a specified sound effect (SEA pattern and DSP modes). Sound effects cannot be changed during recording.

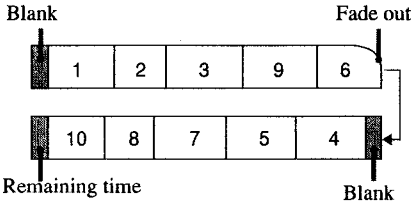
AUTO FADE starts the recording with AI Edit (page 25) and Fade mode (page 23).

- When FUZZY LOGIC CD REC (either AUTO FADE or DIRECT) is pressed, the optimum recording level will be determined by the fuzzy search, then the recording will start from the first CD track. (Since the fuzzy search will search the entire CD, it will take a little time.)
- During the fuzzy search, the track number, number of tracks, playing time, etc., will change accordingly.

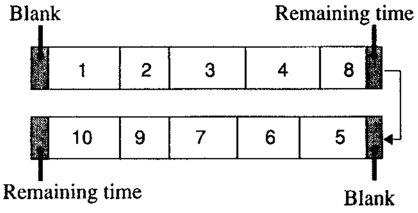
Using CD Edit Mode

The CA-MXG9BK has four CD Edit modes; AI Edit, Auto Edit, Program Edit and Multi-Edit. To take advantage of these Edit modes, read thefollowing instructions carefully.

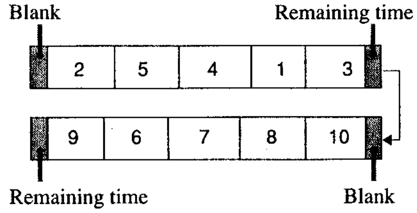
AI Edit


Blank
Fade out
1
2
3
9
6
10
8
7
5
4
Remaining time
Blank

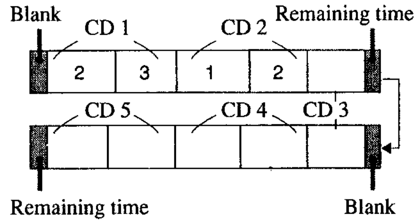
Auto Edit


Blank
Remaining time
1
2
3
4
8
10
9
7
6
5
Remaining time
Blank

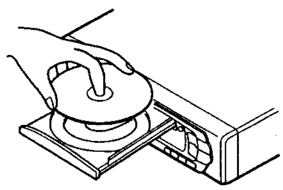
PRGM Edit


Blank
Remaining time
2
5
4
1
3
9
6
7
8
10
Remaining time
Blank

Multi Edit

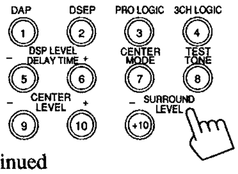

Blank
CD 1
CD 2
Remaining time
2
3
1
2
CD 5
CD 4
CD 3
Remaining time
Blank

1



2

3


DAP
DSEP
PRO LOGIC
3CH LOGIC
1
2
3
4
DSP LEVEL
DELAY TIME
CENTER MODE
TEST TONE
5
6
7
8
CENTER LEVEL
SURROUND LEVEL
9
10
+10

to be continued

What is AI Edit?

This is an editing function which complements the Auto Edit mode. You can use it to maximize the use of the remaining tape length. When the tape comes to its end, the FADE mode will function automatically. Up to 16 tracks can be edited for one side.

What is Auto Edit?

To prevent the beginning of the track from not being recorded, the last track will be replaced automatically in accordance with the remaining tape length. The editing will start with the earlier tracks and the tracks will be selected so they can fit on the tape. No track is selected twice. However, depending on the remaining time, the same track may be selected twice to fill in the recording time at the end of the tape. After up to 16 tracks are edited, the editing procedure will stop.

What is PRGM(program) Edit?

Using this mode you can select which CD tracks go on which side of the tape, and in what order.

What is Multi Edit?

Using this mode you can select tracks from several different CDs. The NONSTOP and FADE NONSTOP modes cannot be used with Multi Edit mode.

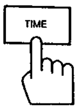
Operating procedures

1. **Load a CD in the tray.**

2. **Press the EDIT MODE button to select the EDIT mode you want to use.**
   Each time you press the button the indicator is displayed as follows in the CD display window.

→ AI → AUTO → PRGM → MULTI → OFF

3. **Press the TIME button to set the time duration.**
   Each time you press the button, the pre-programmed tape length is shown on the display as follows.

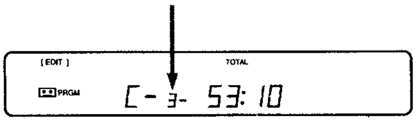


→ 40 → 46 → 50 → 54 → 60 → 64 → 70 → 74 → 80 → 90

If you want to use the Remote, you can set the tape duration by using the +10 button and 10 keys. (Make sure that the TUNER/CD/DSP is set to the CD position.)

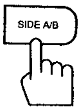
ex. C-30: +10, +10, 10.
C-46: +10, +10, +10, +10, 6.
C-74: +10, +10, +10, +10.....Press the +10 button seven times, then press 4 button.

This number shows the how many times you have pressed the +10 button.

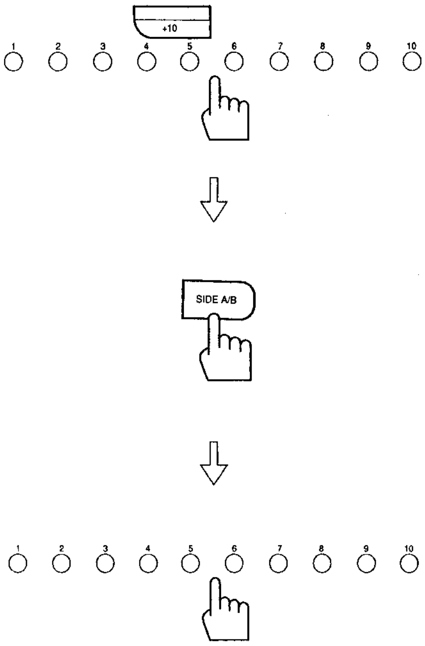

[EDIT]
TOTAL
PRGM
C- 3- 53: 10

to be continued

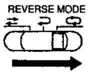
AI Edit or AUTO Edit



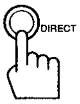
PRGM Edit or Multi Edit



4



5



When you have selected the AI Edit or Auto Edit

Press the SIDE A/B button

The tracks which can fit on side A and B will be automatically selected in accordance with the specified tape length. By repeatedly pressing the SIDE A/B button you can check which tracks have been programmed for which side of the tape.

When you have selected the PRGM Edit or Multi Edit

Select the track numbers for side A with 10 keys.

When you have selected the Multi Edit, you can select tracks from different discs. After you have selected tracks from one disc, replace it with the next disc, then select tracks you want.

Press the SIDE A/B button.

Select the track number for side B.

When you have selected the MULTI EDIT you can change discs, and select up to 10 tracks from one disc.

4. **Put a tape in deck B and set the REVERSE MODE selector to the ⊂⊃ position.**

5. **Press the FUZZY LOGIC CD REC DIRECT button.**

   After a blank of 10 seconds is made at the beginning of the tape, the CA-MXG9BK stores your setting in memory, then the recording will start. If the inserted tape has not been rewound, it will be rewound automatically before the recording begins.

   (Only for the Multi Edit mode)

   When the first disc play ends, deck B enters recording pause mode. Change the disc and press the FUZZY LOGIC CD REC DIRECT button, and repeat this procedure until all the programmed discs are played.

To stop the recording

Press the STOP/CLEAR ■ button.

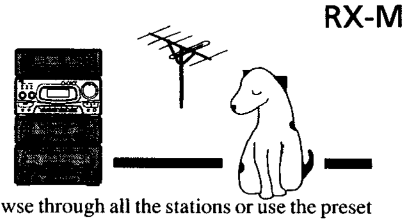
Notes on the PRGM Edit and Multi Edit

To delete the last selected track

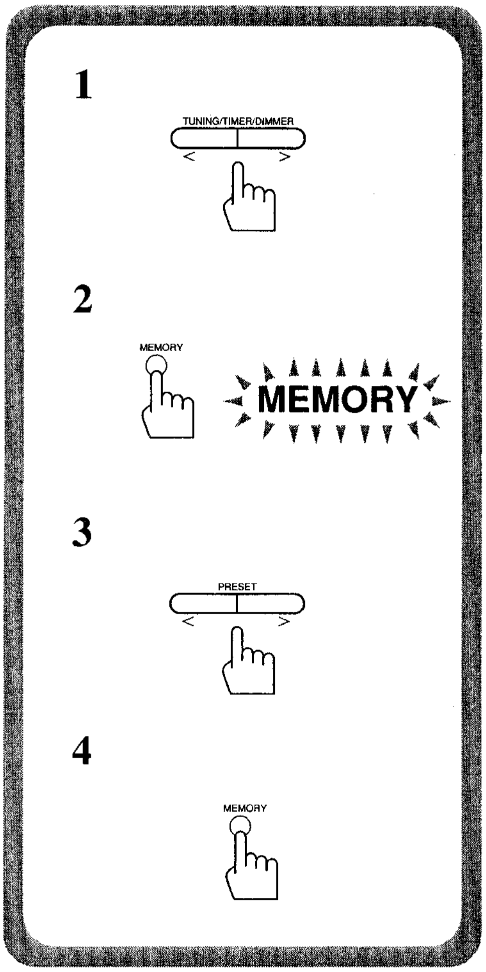
Press the CANCEL button on the CD section in stop mode. Each time you press the button, the last selection will be deleted.

When using Multi Edit, you can only delete the last selected track of the disc loaded on the tray. To delete the last selected track of another disc, change the disc and press the CANCEL button.

Receiving Radio Broadcasts



The controls for the radio are located in the Tuner/Amplifier section. With these controls you can browse through all the stations or use the preset function to go immediately to a particular station. For tuning stations manually, see page 8 of the Easy Guide section.



Using the Bandwidth Memory

Storing Preset Stations

Once a station is assigned to a channel number, the station can be quickly tuned either from the Remote using the 10 keys or from the CA-MXG9BK itself using the PRESET < or > button to call up the channel number.

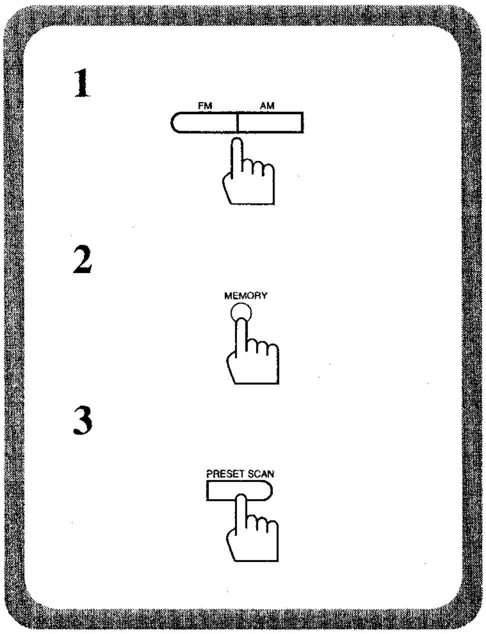
To preset radio stations

1. **Tune in the station you want to set (see page 8 in the Easy Guide section).**
2. **Press the MEMORY button.**
   On the Tuner/Amplifier display, MEMORY will blink for 5 seconds. During these 5 seconds while MEMORY is blinking you can assign a channel number to the station and enter it into the memory.
3. **Select a channel number by pressing the PRESET < or > button until you find the channel number you want.**
   If you select a number you have already assigned, the previous selection will be erased and replaced by the new station.
4. **Press the MEMORY button again and the station will be assigned to the channel number showing on the display.**
   Up to 10 stations each for the FM and AM bands can be preset.

To cancel presetting

Press the CANCEL button.
On the display, CANCEL will blink for 5 seconds. During these 5 seconds for which CANCEL is blinking, you can select the station you want to erase. Press the CANCEL button again.

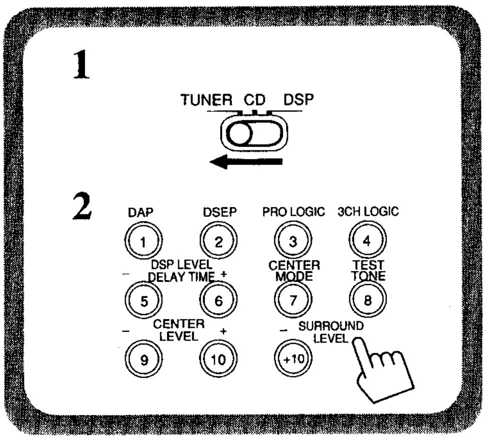
> **CAUTION:** Preset stations may be erased when power is cut off to the Unit, as when it is unplugged from the AC outlet or a power failure occurs. If the preset stations are lost, simply set the stations again using the above procedure.



Using Auto Preset Function

The CA-MXG9BK will automatically preset AM or FM stations.

1. **Press the FM or AM button.**
2. **Press the MEMORY button.**
   On the display MEMORY will blink for 5 seconds. During these 5 seconds for which MEMORY is blinking you can use the Auto Preset mode.
3. **Press the PRESET SCAN button.**
   Regardless of whether FM or AM is selected, the automatic search will start with the FM stations. After the FM preset operation is completed, the AM preset operation will begin. Up to 10 stations each for the FM and AM bands can be preset.
   When a station is found, it will be received for about 5 seconds. If you do not want to preset the station, press the PRESET SCAN button again while receiving the station and the station will be skipped.

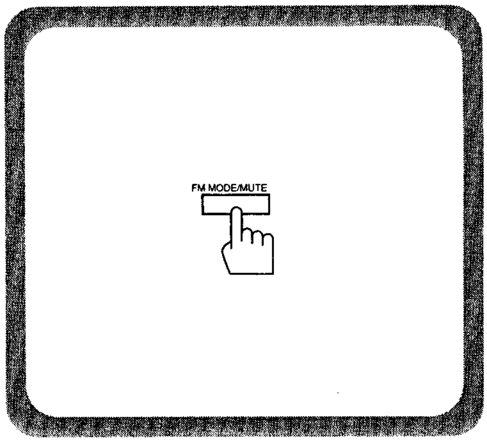


Tuning in a Preset Station

The Remote is very useful for this because you can select channels by number using the 10 keys.

1. **Set the TUNER/CD/DSP selector to the TUNER position.**

2. **Press the 10 keys to select the channel you want.**
   You can also tune in the stations by using the PRESET< or> button on the main Unit. Each time you press the PRESET < or > button, the channel increases or decreases by one. If you hold the button down, the tuner will cycle through the stations one after another.



Selecting the FM Tuning Mode

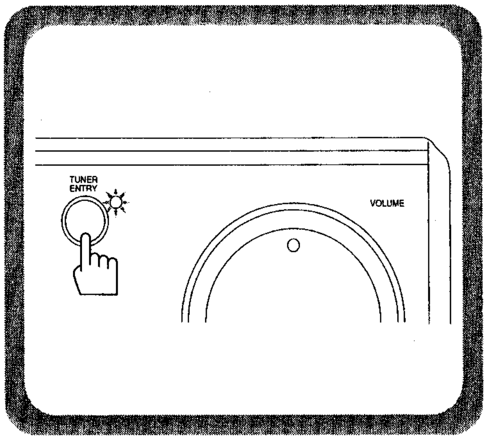
When an FM stereo broadcast is hard to receive or noisy:

Press the FM MODE/MUTE button on the main Unit so that reception improves, although you lose the stereo effect. In this state, you will hear noise while tuning into stations. MONO lights up on the display.

To restore stereo effect

Press the FM MODE/MUTE button again so that AUTO appears on the display.

In this state, when a program is broadcast in stereo, you will hear stereo sound; when in monaural, you will hear monaural sounds. In this state, you won't hear noise while tuning into stations.



Using the Tuner Entry Function

When the CD or tape playback ends, the source will automatically switch to TUNER. Your listening enjoyment will thereby not be interrupted. So with Tuner Entry on, the Unit automatically shifts to the most recently tuned radio station when a tape or CD comes to an end.

Press the TUNER ENTRY button.

The LED next to it lights up when Tuner Entry is on and is off when Tuner Entry is off.

When the CD or tape playback ends, the source will switch to the most recently tuned radio station tuned.

Note

In five situations even if Tuner Entry is on, it will not take effect, and the source will not switch to TUNER after the CD or tape playback ends.

1) When you intentionally stop the CD or tape deck by pressing the STOP/CLEAR ■ button on the CD player or the ■ button on the tape deck.

2) When any timer activated CD or tape stops playing.

3) When you set the REVERSE MODE to the ⊂⊃ position.

4) When you set REPEAT or REPEAT 1 playing.

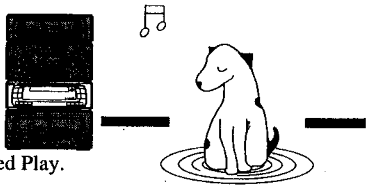
5) When you set AUTO POWER OFF.

Set the AM Tuner Interval Spacing

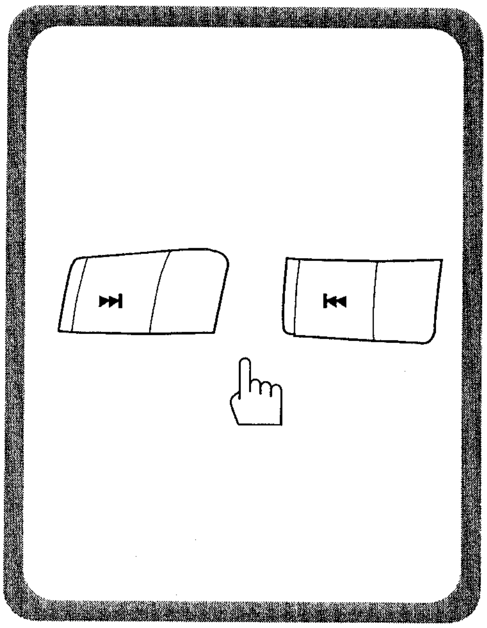
Some countries space AM stations 9 kHz apart, and some countries use 10 kHz spacing.

1. To select the 10 kHz interval, be sure the power is off, but the Unit is plugged into the wall socket. Hold down the PRESET > button and press the POWER ON/STANDBY button.
   Now the 10 kHz interval is selected.
2. To change back from 10 kHz to the factory setting of 9 kHz, be sure the power is off, but the Unit is plugged into the wall socket. Hold down the PRESET < button and press the POWER ON/STANDBY button, and the CA-MXG9BK in now set for 9 kHz spacing.

Playing CDs



You can use various function such as Auto Search, Random Play, Repeat Function, and Programmed Play.



Locating a Particular Track or a Particular Portion of theTrack

Finding a Track You Want

Each time you press briefly and release the ⏮ or ⏭ button, the track changes by one.

- Press and release the ⏭ button to go ahead one track at a time.
- Press and release the ⏮ button to go back one track at a time.
- With the Remote, holding the ⏮ or ⏭ button will change the tracks continuously.

Note

- *Although fast forward and fast reverse are not usable when the CD is off, the track change function is available, so you can select the track you want to start playing when you start the CD. The track number is shown on the display.*

Finding a Particular Point You Want

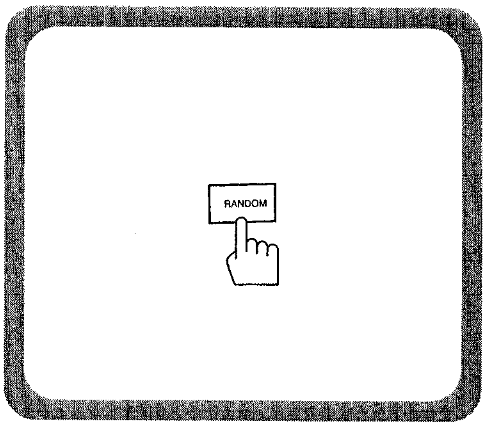
Holding down the ⏮ or ⏭ button on the main Unit will fast forward or fast reverse the CD so you can quickly find the particular portion of a track you want to listen to.

Locating a Track directly with the Remote

1. Set the TUNER/CD/DSP selector to the CD position.

2. Enter the number of the track you want using the 10 keys.

• *Example: for track 5, press 5. For track 15, press +10 then 5. For track 20, press +10, then 10.*



Using Random Play

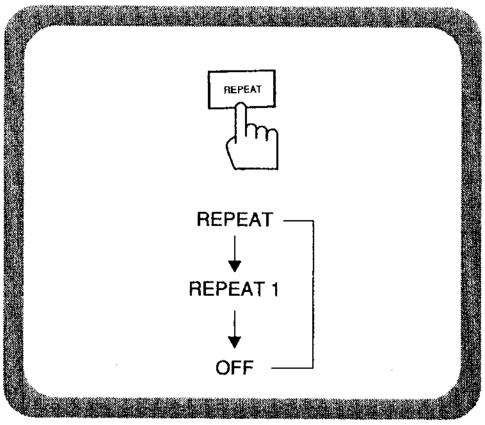
Since the microcomputer will determine the order of the tracks to be played, you will be surprised by the next track played.

Before starting a CD, press the RANDOM button. RANDOM lights up and the ► indicator blinks on the display.

- When all of the tracks have been played, random play will stop.

To stop and cancel the Random Play

Press the STOP/CLEAR ■ button.



Using the Repeat Function

You can have either the program or the individual selection currently playing repeat as many times as you like.

Each time you press the REPEAT button, it cycles from OFF, which turns the REPEAT indication out on the display, to REPEAT which will repeat all tracks in order or according to the program you have set, and REPEAT 1 which will repeat the currently playing track.

To cancel Repeat

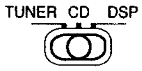
Just press the REPEAT button until the REPEAT indication on the display goes off.

Note

Repeat Play can be used with Program Play or Random Play.

- *With Program Play, the program you made is repeated.*
- *With Random Play, all the tracks on the CD are repeated in a different order each time.*

1



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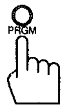

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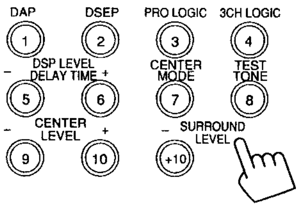

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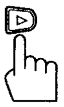


Using Programmed Play

In addition to the high quality sound which makes the CD such a good way to listen to music, you can change the order in which the tracks play. You can arrange the tracks to play in any order you like with the Program function. The Remote is very useful for this because you can select tracks by number with the 10 keys.

To program the CD track order from the Remote

1. **Set the TUNER /CD /DSP selector to the CD position.**
2. **Press the PRGM button. PROGRAM lights on the CD display window.**
3. **Press the 10 keys to select the track numbers you want.**
   Your program can include up to 32 tracks, and you can repeat tracks if you wish.
4. **Press the ▷ button on the CD CONTROL section of the Remote to start the program.**
   The first track you programmed will start to play.

To stop the CD during Programmed Play

Press the □ button. To cancel the program, press the PRGM or the PROGRAM button on the main Unit.

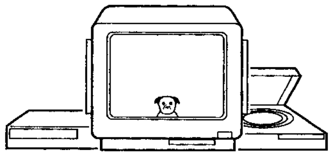
A Few Hints to Make Programming Easier

- If you want to change the number of a track you just entered, press CANCEL on the main Unit, and enter another number.
- If you want to change the entire program, press the STOP/ CLEAR ■ button on the main Unit twice, and then you can start over.
- To view the order of the tracks in your program when it's playing, press the □ button, then press the ⏮ or ⏭ on the CD CONTROL section of the Remote to display the order of the tracks. Each time you press the ⏭ button the next selection in your program is displayed. (Press the ⏮ button for the previous selections.)
- To add a track to your program during play, press the 10 keys on the Remote. Any tracks you add will appear at the end of the current program.

Listening to a VCR , Record Player or other Equipment through Your CA-MXG9BK

By playing a VCR, Record Player or other connected equipment through the CA-MXG9BK, you can often dramatically improve the sound quality, as well as gain control over how the music or program sounds. Once the connected equipment is playing through the CA-MXG9BK, you can apply the sound effects, make recordings, or listen with the headphones. Here are the steps to take:

1



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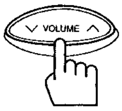

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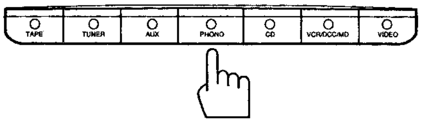

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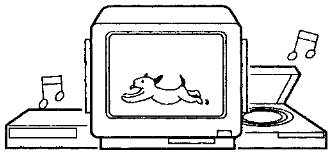

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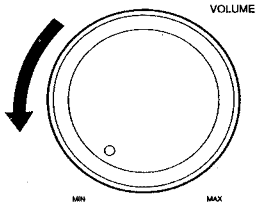
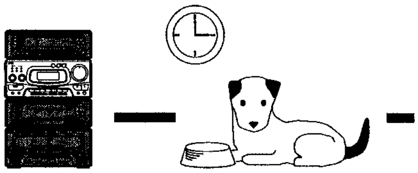


1. **Make a connection between the VCR, Record Player or other equipment as shown on page 4.**
   - Since there are many different types of VCRs and Record Players, etc., we can't tell you here just how to make the connections on the other equipment. However, the diagrams on page 4 will cover most cases, and you can also look in the instruction manual for the other equipment you have.
2. **Set the Unit's volume to its lowest setting. Use < VOLUME > on the Remote, or turn the VOLUME control all the way counterclockwise.**
3. **Select the connected equipment with the source selecting button.**
4. **Switch on the connected equipment and start it playing.**
5. **Adjust the VOLUME to a proper listening level.**

Using the Timers

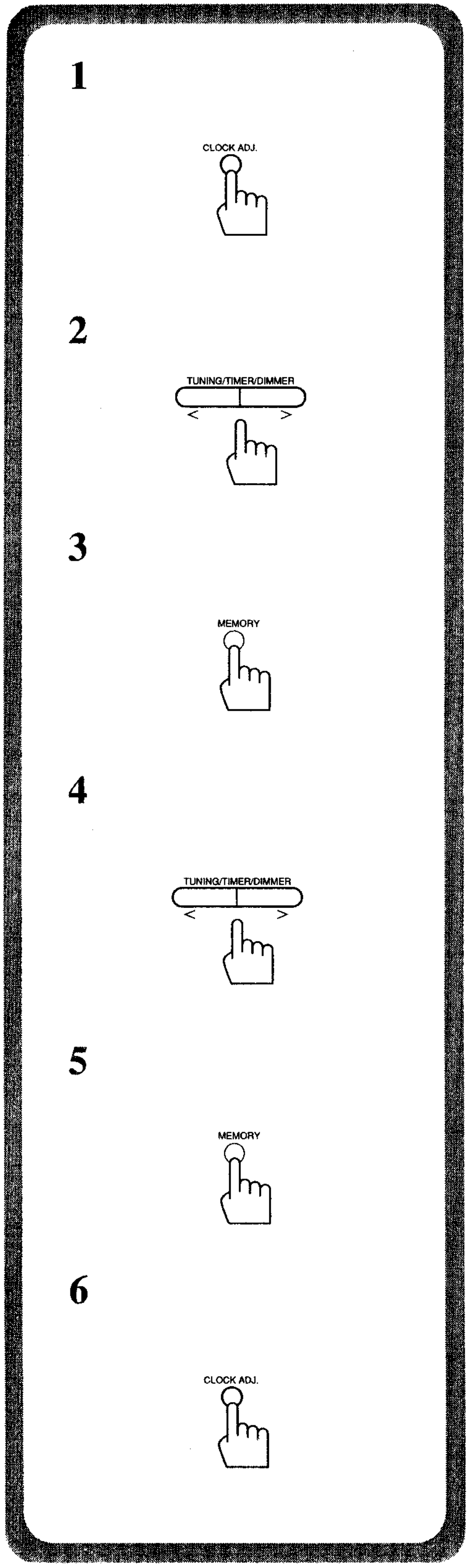


The timers let you control recording and playing functions automatically.

Recording Timer—Unattended recording of radio broadcasts. You can set the starting time and recording duration.

Wake up Timer/Sleep Timer—Wake up to music from any source. Fall asleep and have your CA-MXG9BK turn off automatically after a certain length of time.

ONCE Timer/DAILY Timer—You can program the Unit to come on playing a source at a particular time, and then shut off at a special time.



Setting the Clock

The timers depend on the clock: If the clock is right, the timers will work like you expect, but if the time is incorrect on the clock then the timers will also be incorrect.

Special Notice: The clock must be set, or the timers cannot be set!
So, let's set the clock first.

1. **Press the CLOCK ADJ. button.**

2. **Set the hour by pressing the TUNING/TIMER/DIMMER< or > button.**
   Each time you press it, the hour advances by one. Hold the button down, and the clock will advance one hour at a time as long as the TUNING/TIMER/DIMMER< or > button is held down.

3. **Press the MEMORY button, when the correct hour is showing on the display.**
   The hour is set.

4. **Set the minutes by pressing the TUNING/TIMER/DIMMER< or > button.**
   Each time you press it the minutes advance by one. Hold the button down, and the minutes advance in 10 minute increments .

5. **Press the MEMORY button.**
   The minute is set.

6. **Press the CLOCK ADJ. button again and the clock is set and starts from zero second.**

If the clock has not been set or if there has been a power outrage, "0:00" will be displayed and "CLOCK" will blink. If there is a power failure, the clock looses its setting, the display shows "0:00," and it must be reset.
You can set the clock and the Timers whenever the CA-MXG9BK is turned off, but still connected to a live power source.

Setting the Recording Timer

With the recording timer you can make a tape of a radio broadcast automatically whether or not you are there to start the CA-MXG9BK. For the timer to work correctly, you need to make sure of two things in addition to setting the time for the radio and tape deck to come on:

- A long enough tape must be in deck B.
- The clock must be set to the correct time.

1. **Press the REC button.**
   As long as the indicator is flashing, you can continue with the setting process. If you wait too long, and it stops before you are done, just press the REC button twice and start over.

2. **Set the time you want the radio to come on and the tape in deck B to start recording.**
   Use the TUNING/TIMER/DIMMER < or > button and the MEMORY button just like setting the clock. (See page 32)

3. **Set the time you want the radio and deck B to shut off.**
   Use the TUNING/TIMER/DIMMER < or > button and MEMORY button just like setting the clock. (See page 32)

4. **Press the TUNING/TIMER/DIMMER < or > button to select an FM or AM station, and then press the PRESET < or > button to select the preset channels.**
   At the end of the set length of time the radio and deck B will shut off.

5. **Press the REC button again.**
   The Unit will memorize the setting.
   When the recording timer switches the CA-MXG9BK on, the VOLUME control will automatically be set to MIN.
   Notice that the REC indicator is lighted up on the display whenever the Recording Timer is set.

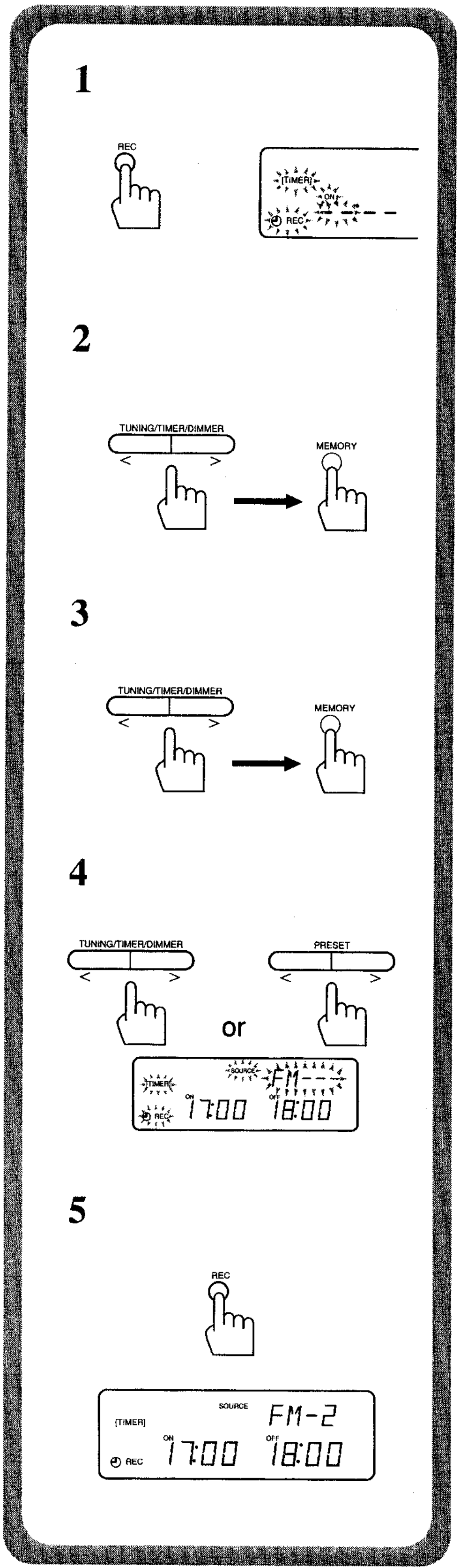
If you do not want the timer to operate but want to keep the setting

Press the REC button so that the REC indicator on the display goes off.

To reactivate the timer

Press the REC button again.

It is very easy, and can be very disappointing, to forget to put in a tape, or to accidentally leave a tape in deck B you don't want recorded over. Although this happens to almost everyone sometimes, we hope it won't happen to you!



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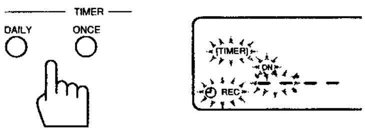

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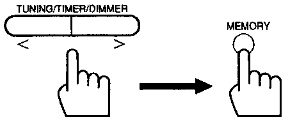


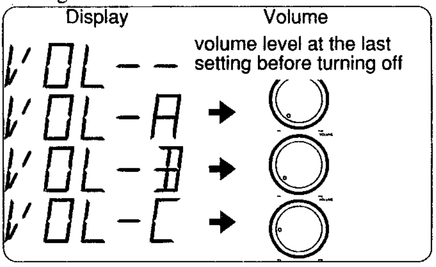
3

Setting the Source

Indicator	Source played
FM	FM
AM	AM
CD	CD
TAPE	TAPE
-----	the most recently used source

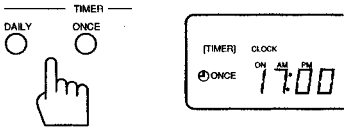
4

Setting the volume



Display	Volume
VOL --	volume level at the last setting before turning off
VOL-A →	
VOL-B →	
VOL-C →	

5



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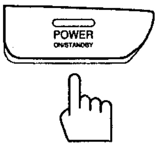


Setting ONCE Timer/DAILY Timer

ONCE Timer works only once.
DAILY Timer executes the timer operation at the same time everyday.

1. **Press the ONCE or DAILY button which you want to set.**
   The timer (ONCE or DAILY) indicator (whichever you choose) blinks on the display.

2. **Press the TUNING/TIMER/DIMMER< or > button to set the start time and the stop time.**
   Use the TUNING/TIMER/DIMMER < or > button and MEMORY button just like setting the clock. (See page 32)

3. **Press the TUNING/TIMER/DIMMER < or > button to select the source, and then press the MEMORY button.**
   Each time you press it the display will cycle from one source to the next. When the source you want is showing, press the MEMORY button. The Unit will memorize the setting.

- When FM or AM is selected
  You need to select a preset station by using the PRESET < or > button.
- When CD is selected
  You can designate the first track to play from the first 10 tracks on the CD.

4. **Press the TUNING/TIMER/DIMMER < or > button to set the volume, then press the MEMORY button.**
   Each time you press it the display cycles from one volume setting to the next as the table on the left. When you press the MEMORY button, the Unit will memorize the setting.

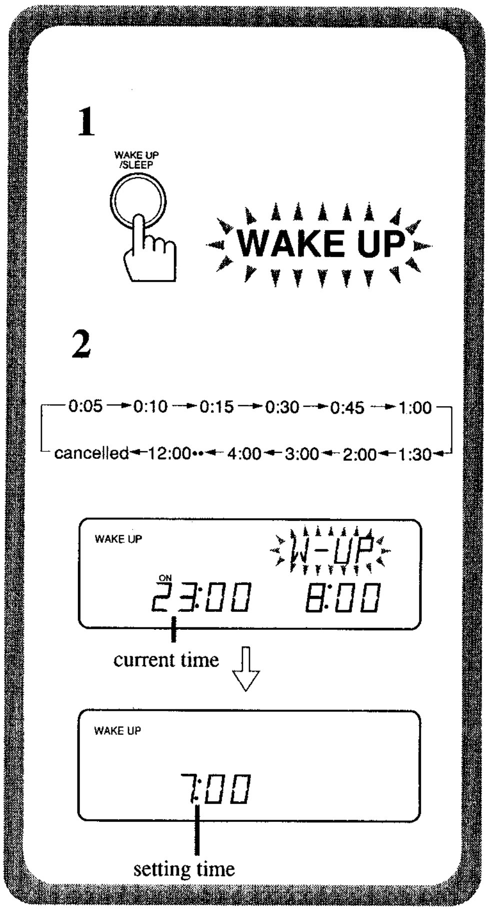
5. **Press the ONCE or DAILY button.**
   The timer indicator you have selected remains lit on the display and shows you the timer is set.

6. **Press the POWER button to turn the Unit off.**

If you do not want the timer to operate but want to keep the setting
Press the ONCE or DAILY button so that the ONCE or DAILY indicator disappears from the display.

To reactivate the timer
Press the ONCE or DAILY button again so that the ONCE or DAILY indicator lights up.

Note
When the timer-on time comes, the VOLUME control gradually turns up to the set position. For example, if your set position is VOL-B, the VOLUME control first turns up to and stays at the VOL-A position briefly, then turns up to the VOL-B position.


1
WAKE UP /SLEEP
WAKE UP
2
0:05 → 0:10 → 0:15 → 0:30 → 0:45 → 1:00
cancelled ← 12:00 ·· ← 4:00 ← 3:00 ← 2:00 ← 1:30
WAKE UP
W-UP
ON
23:00 8:00
current time
WAKE UP
7:00
setting time

WAKE UP Timer

With this timer you can wake up to music from a CD, tape or your favorite radio program.

- The WAKE UP Timer can only be set when the Unit is turned off.

1. **Press the WAKE UP/SLEEP button with the CA-MXG9BK off.**
   The WAKE UP indicator on the display will start blinking.

2. **Set the time you want the Unit to turn on.**
   Each time you press theWAKE UP/SLEEP button, it changes the time shown on the display in the sequence shown at left and is added to the current time.

After selecting the time,wait about 5 seconds, and the CA-MXG9BK memorizes your setting.

- The WAKE UP timer indicator remains lit on the display to let you know that the WAKE UP timer is set.

To cancel the WAKE UP timer setting

Press the POWER button, and the WAKE UP timer indicator on the display will turn off.

To check the time remaining until the Unit turns on

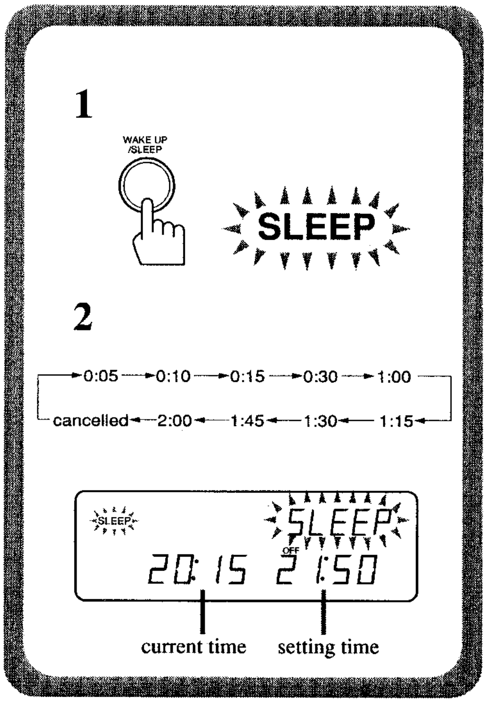
Press the WAKE UP/SLEEP button once.
The remaining time will be displayed for 5 seconds.

To change the set time

Press the WAKE UP/SLEEP button repeatedly.

Hints for using your WAKE UP Timer

- When the set time comes you will hear the most recently used source.
- The volume when the timer turns on the source is the volume last set when the CA-MXG9BK was used. This can be quite a surprise first thing in the morning, so you might want to reset it before going to sleep.
- If the CD is the most recently used source, it starts playing from the first track.


1
WAKE UP /SLEEP
SLEEP
2
0:05 → 0:10 → 0:15 → 0:30 → 1:00
cancelled ← 2:00 ← 1:45 ← 1:30 ← 1:15
SLEEP
SLEEP
OFF
20:15 21:50
current time
setting time

SLEEP Timer

Using this timer, you can fall asleep to music and know your CA-MXG9BK will turn off by itself rather than play all night.

- SLEEP timer can be set only when the Unit is turned on.

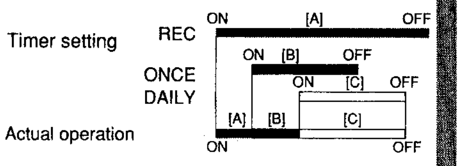
1. **With the CA-MXG9BK on and a source playing, press the WAKE UP/ SLEEP button.**
   The SLEEP indicator on the display will start blinking.

2. **Set the length of time you want the source to play before shutting off.**
   Each time you press the WAKE UP/SLEEP button while SLEEP is blinking, the time shown on the display changes as shown at left and is added to the current time.
   The Unit will now turn off after the time you set.

To cancel the Sleep Timer setting

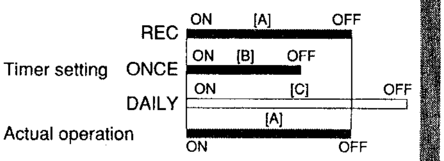
Simply turn the Unit off. SLEEP indication disappears from the display.

A

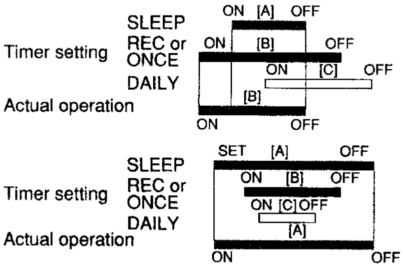

Timer setting
REC
ONCE
DAILY
Actual operation
ON
[A]
OFF
ON [B] OFF
ON [C] OFF
[A] [B] [C]
ON
OFF

* [A], [B], and [C] indicate the different sources.

B

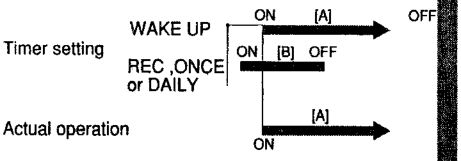

REC
Timer setting ONCE
DAILY
Actual operation
ON [A] OFF
ON [B] OFF
ON [C] OFF
[A]
ON
OFF

C


SLEEP
Timer setting REC or ONCE
DAILY
Actual operation
ON [A] OFF
ON [B] OFF
ON [C] OFF
[B]
ON
OFF
SLEEP
Timer setting REC or ONCE
DAILY
Actual operation
SET [A] OFF
ON [B] OFF
ON [C] OFF
[A]
ON
OFF

* Since the source cannot be selected for the SLEEPtimer, the source is always [B].

D


WAKE UP
Timer setting
REC ,ONCE or DAILY
Actual operation
ON [A]
OFF
ON [B] OFF
[A]
ON

Timer Priority

Setting multiple timers within the same time range will make actual operation complicated.

The convenience and power of having several timers available can also create some complications. For instance, while the recording timer may be set to record a program from 8:00 am to 9:00 am, the Daily timer may be set to play a CD at 8:30 am. So will it interrupt the Radio recording, or will it just not come on, since timer recording is already on?

A little time spent understanding which timers have precedence, as explained below and with the charts on the left, will pay big dividends when using the timers.

A) If the Recording, ONCE, and DAILY timers are set within the same time range, each timer will come on at the time you have set. If another timer is already on, that timer will be shut off when the second timer starts. So if you are recording a radio broadcast with the Recording timer and the ONCE timer is set to start a different station playing during the recording, you will lose the recording at that point.

B) If the Recording, ONCE, and DAILY timers have the same starting time, the timer operation will be executed according to the following priority:
1. Recording timer
2. ONCE timer
3. DAILY timer

C) If the SLEEP timer has been set within the same time range as another timer, the other timer operation will be executed until the SLEEP timer shuts off the Unit. When the SLEEP timer shuts the Unit off, the SLEEP timer operation will take effect. Timer operations with starting times after the SLEEP timer's set time will not be executed. So be especially carefull when setting the time the SLEEP timer shuts off the Unit.

D) The WAKE UP timer operation will have priority over any other timer operation.

E) If the SLEEP timer and AUTO POWER OFF have been set within the same time range, the timer operation with the earlier ending time will have priority.

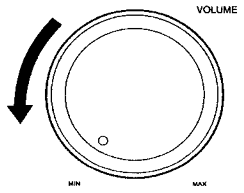
F) If a timer operation begins during AUTO POWER OFF, the timer operation will have priority.

G) If AUTO POWER OFF is used during a timer operation, AUTO POWER OFF will have priority.

Vocal Masking (Sing Along)

Have you ever wished you could sing with a real band, in place of the lead singer? The VOC MASK button lets you use regular tapes, CDs or records as sources of sing-along music. When you press the VOC MASK button, the lead vocal is reduced, and you can replace it by singing into the microphone as the music plays.

1



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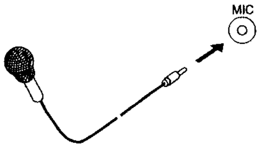

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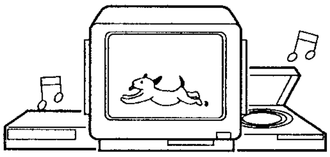

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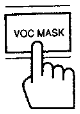
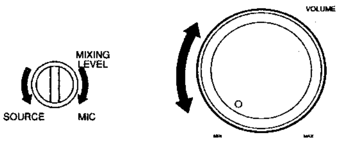


5



Setting the MIXING LEVEL

TOWARD	RESULT
SOURCE	Instrumental music source are emphasized
MIC	Your voice is emphasized

How to Sing Along with Vocal Masking

1. **Turn down the VOLUME control completely.**

2. **Attach the microphone (not supplied) by plugging it into the MIC jack in the amplifier section.**

3. **Start the source.**
   CD, tape, connected VCR, Record Player, etc.

4. **Press the VOC MASK button.**
   The LED on it will light up.

5. **Now adjust the volume of the source with the VOLUME control, and the volume of your voice with the MIXING LEVEL control as you sing into the microphone.**

Important information about Vocal Masking

- *You can change the tone level by using the KEY CTRL button.*
- *Because the radio signal is not as reliable as signals coming from a tape or CD, you may not always get satisfactory results using the radio as a source for Vocal Masking.*
- *With this method of vocal masking the sound in the middle of the stereo field, which is usually a vocal, is reduced without reducing the instrumental part. However, the voice part is not completely eliminated, only significantly reduced.*
- *Some tapes and CDs are better sources for singing along than others.*
  Mono sources are not suitable for Vocal Masking.
- *On sources with duets, strong echoes, a chorus, or with only a few instruments, the singer's voice may not be completely reduced.*
- *Poorly dubbed tapes may not work well for Vocal Masking.*

Using the Microphone Only

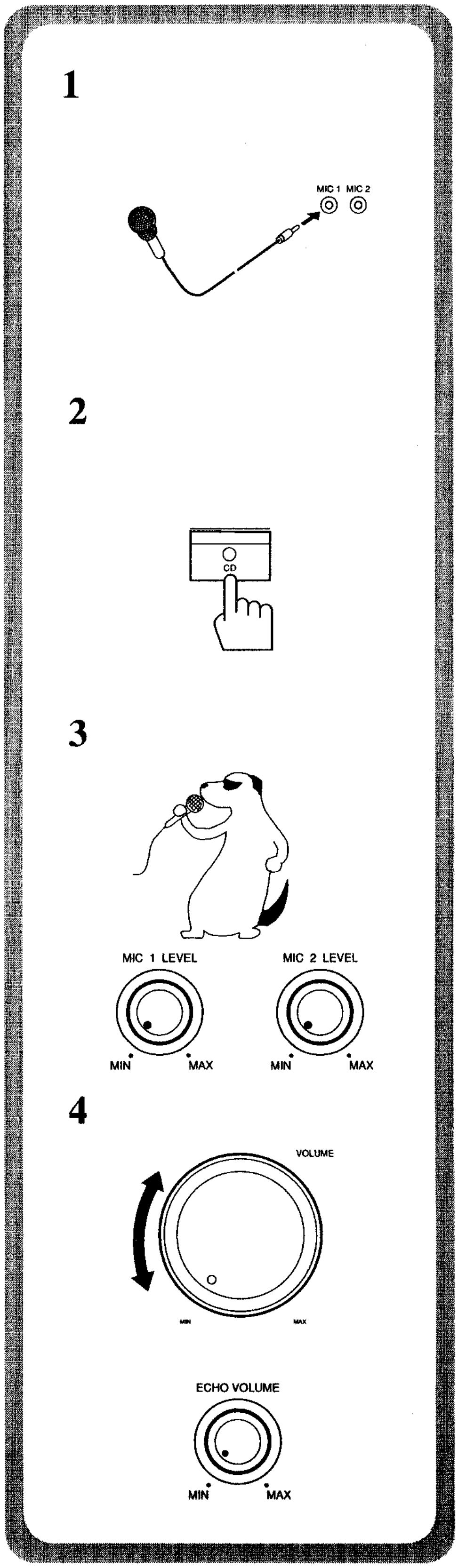
1. Attach the microphone.
2. Set the MIXING LEVEL to the MIC position.
3. Press the CD button from the source selecting buttons.
   If you hear the sound from a CD, press the STOP/CLEAR ■ button.
4. Adjust the VOLUME control.

Recording from the Microphone

You can use the microphone for recording:
Sound going into the microphone is mixed with sound sent to the tape in deck B from some other source, such as the CD, or radio.
You cannot record your singing-along when the main source is a tape in deck A.
See the procedure for recording on page 8 in the Easy Guide section.

Note
To prevent howling and squealing when using the microphone, adjust the VOLUME control, and try not to point the microphone at the speakers.
When you are not using the microphone, disconnect it.

Sing Along with CD Graphics (using Optional VS-G3BK CD Graphics Decoder)


1
MIC 1 MIC 2
2
CD
3
MIC 1 LEVEL
MIC 2 LEVEL
MIN MAX
MIN MAX
4
VOLUME
MIN MAX
ECHO VOLUME
MIN MAX

Vocal Masking with CD Graphics

You can connect an optional CD graphics decoder VS-G3BK and a TV to add graphics to your Karaoke. The various visual Backgrounds enhance Karaoke experience dramatically.

Preparation

- Connect the TV and the optional VS-G3BK (see page 4).
- Turn on the TV.

1. **Attach the microphone to the MIC jack on the optional VS-G3BK.**

2. **Press CD among the source selecting buttons on the CA-MXG9BK.**

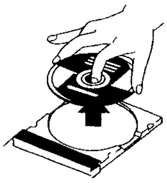
3. **Sing a song or speak into the microphone.**
   You can use the MIC 1 LEVEL or MIC 2 LEVEL on theVS-G3BK to control the voice.

4. **Adjust the VOLUME on the CA-MXG9BK and ECHO VOLUME on the optional VS-G3BK.**

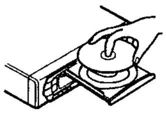
Handling and Maintenance

Compact Discs

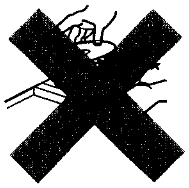
Handle your compact discs, cassette tapes, and tape deck carefully, and they will last a long time.



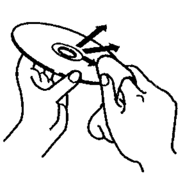
- Remove the CD from the case by holding it at the edges while pressing the center hole lightly.
- Do not touch the shiny surface of the CD, or bend the CD.



- Place the CD into the open tray with the label facing up.



- Put the CD back in its case after use to prevent warping.
- Be careful not to scratch the surface of the CD when placing it back in the case.
- Avoid exposure to direct sunlight, temperature extremes, and moisture.



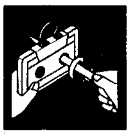
- A dirty CD may not play correctly. If a CD does become dirty, wipe it with a soft cloth in a straight line from center to edge.

CAUTION: Do not use any solvent (for example, conventional record cleaner, spray, thinner, benzine, etc.) to clean a CD.

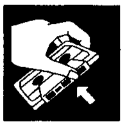
In general, you will have the best performance by keeping your tapes, CDs, and the mechanism clean.

- Store tapes and CDs in their cases, and keep them in cabinets or on shelves.
- Keep the tape deck tape carriers and the CD tray closed when not in use.

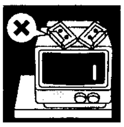
Cassette Tapes



- If the tape is loose in its cassette, take up the slack by inserting a pencil in one of the reels and rotating.
- If the tape is loose it may get stretched, cut, or caught in the cassette.



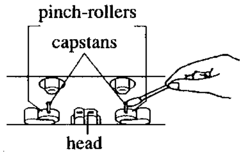
- Do not touch the tape surface.



- Do not store the tape:
  -In dusty places
  -In direct sunlight or heat
  -In moist areas
  -On a TV or speaker
  -Near a magnet

Tape Deck

- If the heads, capstans, and pinch-rollers of the tape deck become dirty, the following will occur:
  -Impaired sound quality
  -Discontinous sound
  -Fading
  -Incomplete erasure
  -Difficulty recording
- Clean the heads, capstans, and pinch-rollers using a cotton swab moistened with alcohol.



- If the heads become magnetized, they will produce noise or loose high frequencies.
- To demagnetize the heads, turn off the system, and use a head demagnetizer (available at electronics and record shops).

Troubleshooting

- If you are having a problem with your CA-MXG9BK, check this list for a possible solution before calling for service.
- If you cannot solve the problem from the hints given here, or the Unit has been physically damaged, call a qualified person, such as your dealer, for service.

Symptom	Possible Cause	ACTION
No sound is heard.	Connections are incorrect, or loose.	Check all connections and make corrections. (See pages 4 – 6.)
Impossible to record.	Cassette record protect tabs are removed.	Cover holes on back edge of cassette with tape.
Hard to listen to broadcasts because of noise.	The antenna is disconnected. The loop antenna is too close to the system. The feeder/wire antenna is not properly extended and positioned.	Re-connect the antenna securely. Change the position and direction of the loop antenna. Extend feeder/wire antenna at the best reception position.
The CD sound is discontinuous.	The CD is scratched or dirty.	Clean or replace the CD.
Unable to operate the Remote.	The path between the Remote and the sensor on the Unit is blocked. The batteries are discharged.	Remove the obstruction. Replace the batteries.
The CD tray cannot be operated.	The main AC power cord is not plugged in.	Plug in the AC power plug.
The CD does not play.	The CD is upside down.	Put the CD in with the label side up.
Operations are disabled.	The built in microprocessor may malfunction due to external electrical interference.	Unplug the system then plug it back in.
The cassette holder cannot be opened.	The system was turned off because the timer was operated while the tape was running.	Turn on the system.

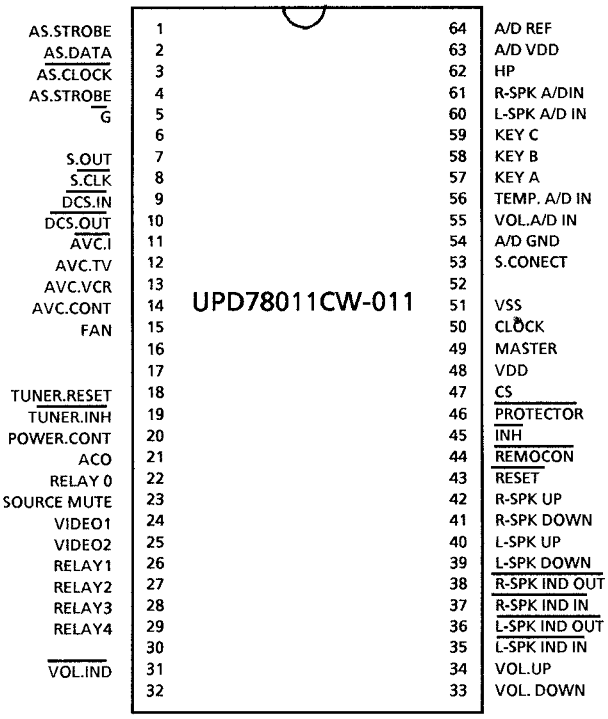
Specifications (Design and specifications subject to change without notice.)

Amplifier	
Output Power (IEC 263-3/DIN)	
FRONT SPEAKERS A	18 watts per channel into 6 ohms at 80 Hz with 0.9% total harmonic distortion.
FRONT SPEAKERS B/C	13.5 watts per channel, min. RMS, both channels driven into 8 ohms at 1 kHz (DIN)
Total HarmonicDistortion at Half-Rated Power	0.05%
Audio Input Sensitivity/Impedance (1 kHz)	
PHONO	3.0 mV/50 kohms
VIDEO	300 mV/50 kohms
VCR/DCC/MD	300 mV/50 kohms
AUX	300 mV/50 kohms
Audio Output Load/Impedance	
VCR/DCC/MD	200 mV/2.5 kohms
Video Input	
VIDEO	1 Vp-p/75 ohms
VCR	1 Vp-p/75 ohms
CD-G	1Vp-p/75 ohms
Video Output	
MONITOR	1Vp-p/75 ohms
VCR	1Vp-p/75 ohms
Tuner	
FM	
Tuning Range	87.5 – 108.0 MHz
Usable Sensitivity	0.95 µV/75 ohms (10.8 dBf)
Signal-to-Noise Ratio (IHF-A weighted/DIN)	MONO (at 85 dBf) 80 dB STEREO (at 85 dBf) 73 dB/64 dB
AM	
Tuning Range	531 – 1,602 kHz (9 kHz step) 530 – 1,600 kHz (10 kHz step)
Dimensions (WxHxD)	275 x 124 x 299 mm (10 - 7/8 x 5 x 11 - 7/8 in.)
Weight	5.3 kg (14.8lbs)
Tape deck	
Frequency response	
Normal:	30 – 15,000 Hz
CrO_2:	30 – 16,000 Hz
Metal:	30 – 17,000 Hz
Wow and Flutter (WRMS/DIN)	0.09%/0.2%
Dimensions (WxHxD)	275 x 124 x 267 mm (10 - 7/8 x 2 - 3/4 x 10 -5/8 in.)
Weight	2.9 kg (6.5 lbs)
Compact Disc Player	
Dynamic Range (1 kHz)	90 dB
Signal-to-Noise Ratio	100 dB
Wow and Flutter	Unmeasurable
Dimensions (WxHxD)	275 x 90 x 275 mm (10 - 7/8 x 3 - 5/8 x 10 - 7/8 in.) (Maximum depth 415 mm (16-7/16 in.) with the CD tray open)
Weight	2.2 kg (4.8 lbs)
Graphic Equalizer	
SEA Center frequencies	63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz 6.3 kHz, 16 kHz
SEA Control Range	±12 dB ±1 dB
Dimensions (WxHxD)	275 x 90 x 267 mm (10 - 7/8 x 3 - 5/8 x 10 - 5/8 in.)
Weight	1.6 kg (3.6 lbs)
Power Specifications	
Line Voltage & Frequency	AC110–115V/220–230V∿, selectable, 50/60 Hz
Power Consumption	185 watts
Supplied Accessories	
FM feeder antenna (1)	
AM loop antenna (1)	
Remote control (RM-SEMXG9U) (1)	
Batteries R03(UM-4)/AAA(24F) (2)	
AC plug adaptor (1)	
Antenna adaptor (1)	
Optional Speakers	**SP-MXG9BK**
Type	3-way 4 speakers bass reflex type
Speakers	
Low range Super woofer:	17.5 cm (6-15/16 in.) cone x 1
Mid/High range Tweeter:	3.0 cm (1-3/16 in.) cone x 1
Full range:	9.5 cm (3-3/4 in.) cone x 1
Full range Motor driven:	9.5 cm (3-3/4 in.) cone x 1
Sound pressure level	
Low range	86 dB/w.m
Mid/High range	86 dB/w.m
Full range	86 dB/w.m
Power handling capacity	
Low range	30 watts
Mid/High range	25 watts
Full range	25 watts
Frequency Range	
Low range	38 Hz–8,000 Hz
Mid/High range	120 Hz–20,000 Hz
Full range	120 Hz–20,000 Hz
Rated Impedance	
Low range	6 ohms
Mid/High range	8 ohms
Full range	8 ohms
Dimensions (WxHxD)	230 x 426 x 281 mm (9 - 1/16 x 16 - 3/16 x 11 - 3/16 in.)
Weight	7.5 kg (16.6lbs) each
Supplied Accessory	Speaker cords (2)

Description of ICs

■ UPD78011CW-011 (IC701) : System controller

1. Terminal Layout


UPD78011CW-011
AS.STROBE 1
AS.DATA 2
AS.CLOCK 3
AS.STROBE 4
G 5
6
S.OUT 7
S.CLK 8
DCS.IN 9
DCS.OUT 10
AVC.I 11
AVC.TV 12
AVC.VCR 13
AVC.CONT 14
FAN 15
16
17
TUNER.RESET 18
TUNER.INH 19
POWER.CONT 20
ACO 21
RELAY 0 22
SOURCE MUTE 23
VIDEO1 24
VIDEO2 25
RELAY1 26
RELAY2 27
RELAY3 28
RELAY4 29
30
VOL.IND 31
32
64 A/D REF
63 A/D VDD
62 HP
61 R-SPK A/DIN
60 L-SPK A/D IN
59 KEY C
58 KEY B
57 KEY A
56 TEMP. A/D IN
55 VOL.A/D IN
54 A/D GND
53 S.CONECT
52
51 VSS
50 CLOCK
49 MASTER
48 VDD
47 CS
46 PROTECTOR
45 INH
44 REMOCON
43 RESET
42 R-SPK UP
41 R-SPK DOWN
40 L-SPK UP
39 L-SPK DOWN
38 R-SPK IND OUT
37 R-SPK IND IN
36 L-SPK IND OUT
35 L-SPK IND IN
34 VOL.UP
33 VOL. DOWN

2. Key input (KEY A~C)

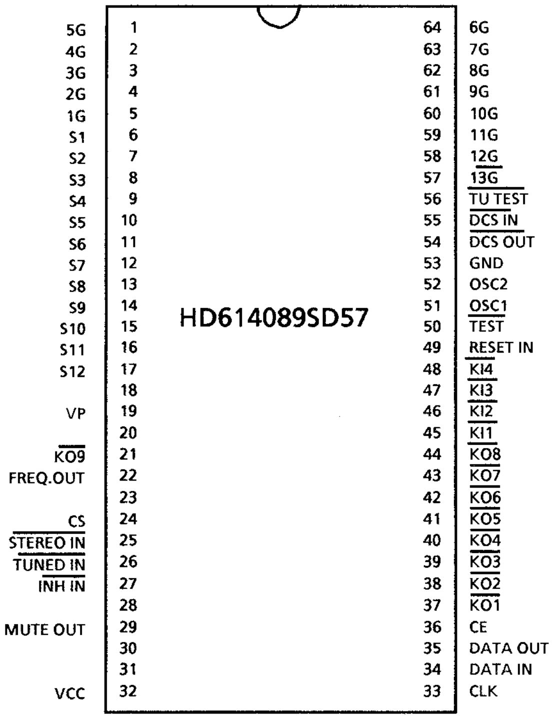
KEY A	KEY B	KEY C
AUTO LOUDNESS	SOURCE DIRECT	TUNER ENTRY
VIDEO	VCR	AUTO POWER OFF
CD/CDG	PHONO	–
AUX	TUNER	–
TAPE	POWER	–

3. Pin Functions

Pin No.	Symbol	I/O	Functions
1	AS STROBE	O	Strobe for data transmission to IC201 and IC203
2	AS DATA	O	Switch data to IC201 and IC203
3	AS CLOCK	O	Clock for data transmission
4	AS. STROBE	O	Strobe for IC902 and IC903
5	G	O	Ehable for IC902 and IC903
6,16, 17,32		--	Connected to GND
7	S. OUT	O	Data for IC902 and IC903
8	S.CLK	O	Data latch clock for IC902 and IC903
9,10	DCS IN/OUT	I/O	Compulink signal
11~14	AVC.I/TV/ VCR/CONT	--	Non connection
15	FAN	O	Fan control signal
18	T.RESET	O	Tuner reset signal
19	T.INH	O	Tuner inhibit signal
20	P.CONT	O	Power on : H (Cassette deck , DSP control)
21	ACO	O	Regulator control (Power on : H)
22	RELAY 0	O	Relay control signal for main speaker
23	SOURCE MUTE	O	Mute (Power on/off , Changing source)
24,25	VIDEO1,2	O	Video selector control
26~29	PLAY1~4	O	Speaker matrix control
30	SPK POWER	O	Power control for panorama speaker
31	VOL IND	O	Indication control
33,34	VOL. DOWN/UP	O	Volume control signal
35~38	L(R)-SPK IND IN/OUT	I/O	Indication of left (right) panorama speaker
39~42	L(R)-SPK DOWN/UP	O	Panorama speaker control
43	RESET	I	Reset signal
44	REMOCON	I	Remote control signal input
45	INH	I	Inhibit signal input
46	PROTECTOR	I	Input from protector
47	CS	I	Chip select
48 63	VDD A/D VDD	--	Power supply
49,50	M. CLOCK	--	Oscillation terminal
51 54	VSS A/D GND	--	GND
52		--	Non connection
53	S.CONNECT	--	Connected to +5V
55	VOL A/D IN	I	Observing the position of master volume
56	TEMP A/D IN	I	Sensing temperature
57~59	KEY A~C	I	Key input
60,61	R(L)-SPK A/D IN	I	Observing the position of the right (left) speaker
62	HP	I	Observing the connect of the headphone
64	A/D REF	I	Reference voltage for inner A/D converter

■ HD614089SD57 (IC901) : Tuner Controller

1. Terminal Layout


HD614089SD57
5G 1
4G 2
3G 3
2G 4
1G 5
S1 6
S2 7
S3 8
S4 9
S5 10
S6 11
S7 12
S8 13
S9 14
S10 15
S11 16
S12 17
18
VP 19
20
KO9 21
FREQ.OUT 22
23
CS 24
STEREO IN 25
TUNED IN 26
INH IN 27
28
MUTE OUT 29
30
31
VCC 32
64 6G
63 7G
62 8G
61 9G
60 10G
59 11G
58 12G
57 13G
56 TU TEST
55 DCS IN
54 DCS OUT
53 GND
52 OSC2
51 OSC1
50 TEST
49 RESET IN
48 KI4
47 KI3
46 KI2
45 KI1
44 KO8
43 KO7
42 KO6
41 KO5
40 KO4
39 KO3
38 KO2
37 KO1
36 CE
35 DATA OUT
34 DATA IN
33 CLK

2. Key matrix

	KI 1 (PIN45)	KI 2 (PIN46)	KI 3 (PIN47)	KI 4 (PIN48)
KO 1 (PIN37)	WAKE UP /SLEEP	ONCE TIMER	DAILY TIMER	REC TIMER
KO 2 (PIN38)	–	CLOCK ADJ.	CANCEL	MEMORY
KO 3 (PIN39)	UP	DOWN	PRESET UP	PRESET DOWN
KO7 (PIN43)	PRESET SCAN	AUTO /MONO	FM	AM
KO 8 (PIN44)	*1 BAND0	–	*2 9k/10k	*3 24H/12H

(NOTE)

	U	A	EF,EN	BS	G	GI
*1	USED	NONE	NONE	NONE	NONE	NONE
*2	USED	NONE	NONE	NONE	NONE	NONE
*3	NONE	NONE	NONE	NONE	NONE	USED

3. Pin Functions

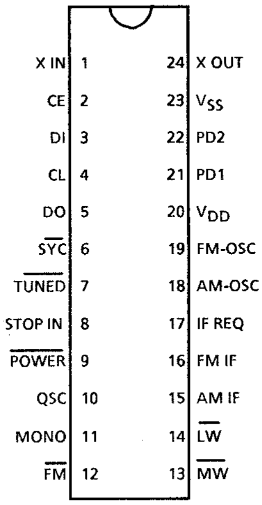
Pin No.	Symbol	I/O	Functions	Pin No.	Symbol	I/O	Functions
1~5	5G~1G	O	Grid control	32	VCC	--	Power supply
6~17	S1~S12	O	Segment control	33	CLK	O	Clock for PLL synthesizer
18	—	--	Non cennection	34	DATA IN	I	Data from PLL synthesizer
19	VP	I	Power supply for FL display	35	DATA OUT	O	Data for PLL synthesizer
20	—	--	Non connection	36	CE	O	Chip enable signal for PLL synthesizer
21	KO9	--	Non connection	37~44	KO1~KO8	O	Key matrix output
22	FREQ OUT	O	Clock frequency	45~48	KI1~KI4	I	Key matrix input
23	—	--	Non connection	49	RESET IN	I	Reset signal input
24	CS	--	Connected to +5V	50	TEST	I	Test mode terminal
25	STEREO IN	I	For the indication of 'STEREO'	51,52	OSC1,OSC2	--	Oscillation terminal
26	TUNED IN	I	For the indication of 'TUNED'	53	GND	--	GND
27	INH IN	I	Inhibit input	54	DCS OUT	O	Compulink signal output
28	—	--	Non connection	55	DCS IN	I	Compulink signal input
29	MUTE OUT	O	Muting tuner sound	56	TU TEST	I	Test mode terminal
30,31	—	--	Non connection	57~64	13G~6G	O	Grid control signal

■ LC7218 (IC102) : PLL Synthesizer

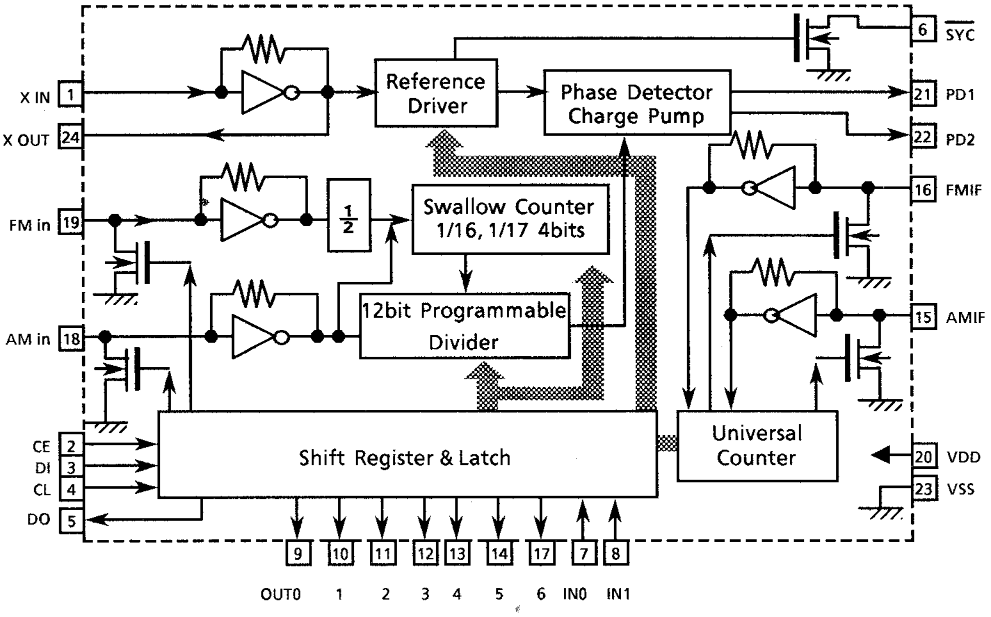
1. The main function descriptions

(1) It makes the local oscillation frequency by the control data from IC901.
(2) Decode the control signal and transmit the signal for receiving conditions.
(3) For the best tuning, count the internal-frequency and transmit the data to IC901.

2. Terminal Layout


X IN 1
CE 2
DI 3
CL 4
DO 5
SYC 6
TUNED 7
STOP IN 8
POWER 9
QSC 10
MONO 11
FM 12
24 X OUT
23 VSS
22 PD2
21 PD1
20 VDD
19 FM-OSC
18 AM-OSC
17 IF REQ
16 FM IF
15 AM IF
14 LW
13 MW

3. Block Diagram


X IN 1
X OUT 24
FM in 19
AM in 18
CE 2
DI 3
CL 4
DO 5
Reference Driver
Phase Detector Charge Pump
1/2
Swallow Counter 1/16, 1/17 4bits
12bit Programmable Divider
Shift Register & Latch
Universal Counter
6 SYC
21 PD1
22 PD2
16 FMIF
15 AMIF
20 VDD
23 VSS
9 10 11 12 13 14 17 7 8
OUT0 1 2 3 4 5 6 IN0 IN1

4. Pin Functions

Pin No.	Symbol	I/O	Functions
1,24	X in , X out	I/O	Crystal oscillator (7.2MHz).
2	CE	I	Fix the chip enable to "H" when inputting (DI) and outputting (DO) the serial data.
3	DI	I	Receive the control data from the controller (IC901).
4	CL	I	This clock is used to synchronize data when transmitting the data of DI and DO.
5	DO	O	Transmit the data from LC7218 to the controller which is synchronized with CL.
6	SYC	—	Not used.
7	TUNED	I	Receive the tuned signal from IC104 (LA1266A).
8	STOP IN	—	Connected to GND
9	POWER	—	Not used.
10	QSC	—	Not used.
11	MONO	O	It is "H" on FM-monaural, "L" on FM-Stereo.
12	FM	O	It is "L" on FM mode.
13	MW	O	It is "L" on MW mode.
14	LW	O	It is "L" on LW mode.
15	AM-IF	I	Universal counter input for AM-IF from IC104 (LA1266A).
16	FM-IF	I	Universal counter input for FM-IF from IC104(LA1266A).
17	IF REQ	O	Output the "IF-signal request" to IC104 when the pin-7 (tuned in) goes to "H".
18	AM OSC	I	Input the local oscillator signal of AM.
19	FM OSC	I	Input the local oscillator signal of FM.
20	V_{DD}	—	This is a terminal of power supply.
21	PD1	O	PLL charge pump output : When the local oscillator signal frequency is higher than the reference frequency high level signals will output. When it is lower than the reference frequency, low level signals will output. When it is same as reference frequency signals, it will be floating.
22	PD2	—	Not used.
23	Vss	—	Connected to GND

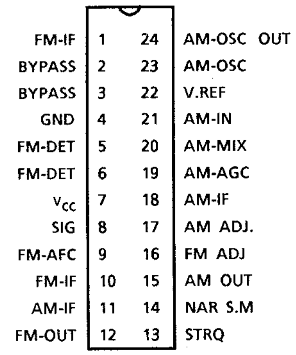
■ LA1266A (IC104) : FM AM IF AMP & detector

1. The main function descriptions

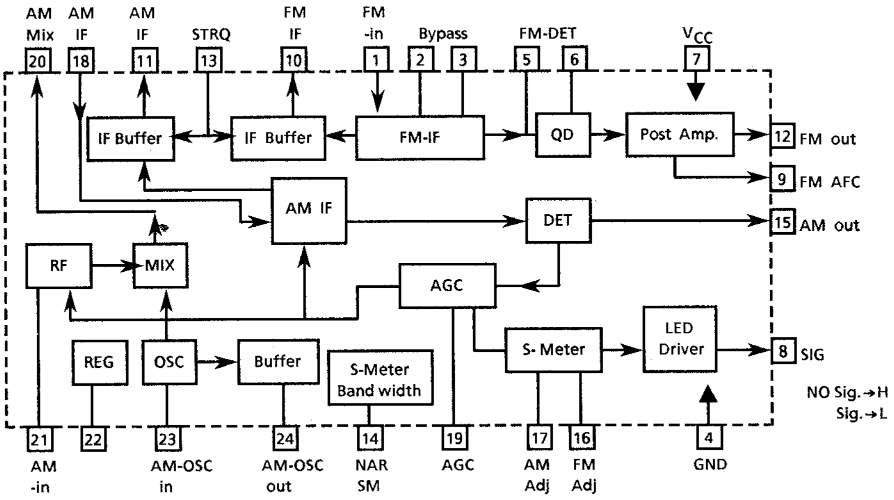
(1) Amplify and detect of FM intermodulation frequencies.

(2) It has local oscillator and mixer for AM, and amplify the AM-IF signal.

2. Terminal Layout


FM-IF 1
BYPASS 2
BYPASS 3
GND 4
FM-DET 5
FM-DET 6
V_{CC} 7
SIG 8
FM-AFC 9
FM-IF 10
AM-IF 11
FM-OUT 12
24 AM-OSC OUT
23 AM-OSC
22 V.REF
21 AM-IN
20 AM-MIX
19 AM-AGC
18 AM-IF
17 AM ADJ.
16 FM ADJ
15 AM OUT
14 NAR S.M
13 STRQ

3. Block Diagram


AM Mix 20
AM IF 18
AM IF 11
STRQ 13
FM IF 10
FM -in 1
Bypass 2 3
FM-DET 5 6
V_{CC} 7
IF Buffer
IF Buffer
FM-IF
QD
Post Amp.
12 FM out
9 FM AFC
AM IF
DET
15 AM out
RF
MIX
AGC
REG
OSC
Buffer
S-Meter Band width
S- Meter
LED Driver
8 SIG
NO Sig.→H
Sig.→L
21 AM -in
22
23 AM-OSC in
24 AM-OSC out
14 NAR SM
19 AGC
17 AM Adj
16 FM Adj
4 GND

4. Pin Functions

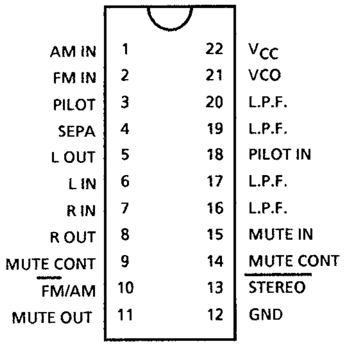
Pin No.	Symbol	I/O	Functions
1	FM IN	I	This is an input terminal of FM IF signal.
2,3	BYPASS	--	Bypass of FM IF amp.
4	GND	--	This is the device ground terminal.
5,6	FM DET	--	FM detect transformer.
7	V_{CC}	--	This is the power supply terminal.
8	SIG	O	When the machine is tunning ,this terminal becomes "L".
9	FM AFC	O	This is an output terminal of voltage for FM - AFC(Auto frequency control).
10	FM IF	O	When the signal of IF REQ of IC102(LC7218) appear, the signal of FM IF output.
11	AM IF	O	When the signal of IF REQ of IC102(LC7218) appear, the signal of AM IF output.
12	FM OUT	O	FM composite signal out
13	STRQ	I	The IF-signals come out from pin10 (FM-IF) or pin11 (AM-IF) while this terminal going to "High".
14	NAR SM	--	Control the Band-width of signal meter.
15	AM OUT	O	AM signal out
16	FM ADJ	--	For adjusting the stop level (or mute level) of FM.
17	AM ADJ	--	For adjusting the stop level (or mute level) of AM.
18	AM-IF	I	Input of AM IF signal.
19	AM-AGC	I	This is an AGC voltage input terminal for AM.
20	AM-MIX	O	This is an output terminal for AM mixer.
21	AM-IN	I	This is an input terminal for AM RF signal.
22	V.REF	--	Resistor value between pin9 and pin22 desides the frequency width of the input signal.
23	AM-OSC	--	This is a terminal of AM Local oscillation circuit.
24	AM-OSC OUT	O	AM Local Oscillation Signal output.

■ LA3401 (IC105) : FM MPX Detector

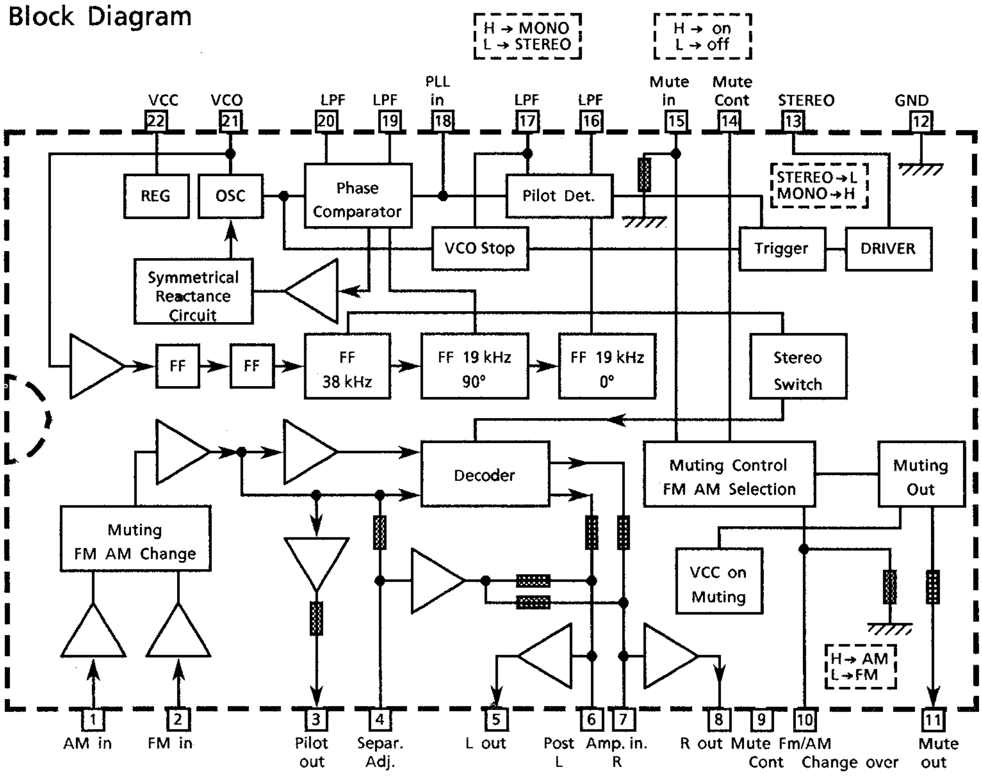
1. The main function descriptions

(1) Detect the FM multiplex signal (Stereo signal).
(2) When receiving FM stereo signal, it outputs the signal for indication.
(3) AM/FM audio amplifier.

2. Terminal Layout


AM IN 1
FM IN 2
PILOT 3
SEPA 4
L OUT 5
L IN 6
R IN 7
R OUT 8
MUTE CONT 9
FM/AM 10
MUTE OUT 11
22 VCC
21 VCO
20 L.P.F.
19 L.P.F.
18 PILOT IN
17 L.P.F.
16 L.P.F.
15 MUTE IN
14 MUTE CONT
13 STEREO
12 GND

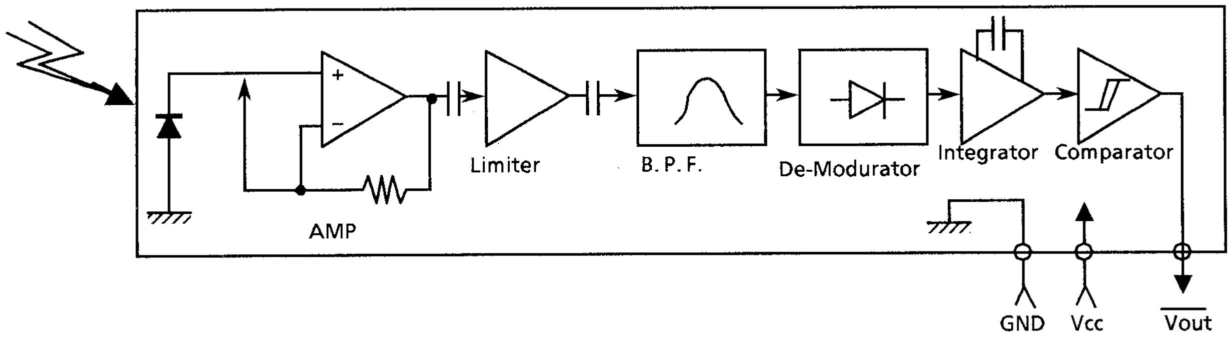
3. Block Diagram


H → MONO
L → STEREO
H → on
L → off
VCC 22
VCO 21
LPF 20
LPF 19
PLL in 18
LPF 17
LPF 16
Mute in 15
Mute Cont 14
STEREO 13
GND 12
REG
OSC
Phase Comparator
Pilot Det.
STEREO→L
MONO→H
VCO Stop
Trigger
DRIVER
Symmetrical Reactance Circuit
FF
FF
FF 38 kHz
FF 19 kHz 90°
FF 19 kHz 0°
Stereo Switch
Decoder
Muting Control FM AM Selection
Muting Out
Muting FM AM Change
VCC on Muting
H→ AM
L→FM
1 AM in
2 FM in
3 Pilot out
4 Separ. Adj.
5 L out
6 Post L
7 Amp. in. R
8 R out
9 Mute Cont
10 Fm/AM Change over
11 Mute out

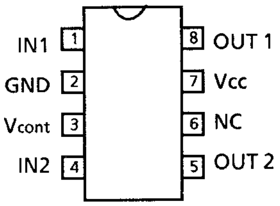
4. Pin Functions

Pin No.	Symbol	I/O	Functions
1	AM IN	I	This is an input terminal for AM signal.
2	FM IN	I	This is an input terminal for FM composite signal.
3	PILOT OUT	O	Output of MPX pilot signal (Connect to Pin18).
4	SEPA. ADJ.	--	Separation adjustment.
5	L. OUT	O	Left channel signal output.
6	L	I	Input terminal of the left channel post-amplifier
7	R	I	Input terminal of the right channel post-amplifier
8	R. OUT	O	Right channel signal output
9	MUTE CONT	--	The mute time is controlled by the connected capacitor when turning the power switch on.
10	FM/AM	I	Change over the FM/AM input. "H" : AM, "L" : FM
11	MUTE OUT	---	Not used
12	GND	--	Ground terminal.
13	STEREO	O	Stereo indicator output. Stereo : "L", Mono : "H"
14	MUTE CONT	--	The mute time is controlled by the connected capacitor when changing over the FM/AM .
15	MUTE IN	I	Mute signal input. "H" : Mute on, "L" : Mute off.
16	LPF	--	Low pass filter of pilot detector.
17	LPF	--	While this terminal goes to "H", the VCO stops.
18	PILOT IN	I	Pilot signal input
19	LPF	--	Low-pass filter of PLL.
20	LPF	--	Low-pass filter of PLL.
21	VCO	I	Voltage controlled oscillator terminal.
22	V_{CC}	--	Power supply.

■ GP1U901X (IC904) : Receiver for Remote Control


+
−
AMP
Limiter
B. P. F.
De-Modurator
Integrator
Comparator
GND
Vcc
$\overline{\text{Vout}}$

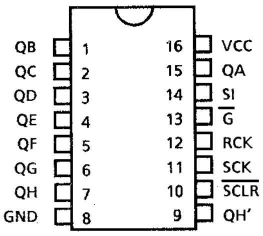
■ LB1639-CV (IC702,703,704) : Motor Driver


IN1 1
GND 2
Vcont 3
IN2 4
8 OUT 1
7 Vcc
6 NC
5 OUT 2

IN 1	IN 2	OUT 1	OUT 2	MOTOR
H	L	H	L	CLOCKWISE
L	H	L	H	COUNTER-CLOCKWISE
H	H	OFF	OFF	WAITING
L	L	OFF	OFF	WAITING

■ TC74HC595AP (IC902,903) : 8-Bit Shift Register

1. Terminal Layout


QB 1
QC 2
QD 3
QE 4
QF 5
QG 6
QH 7
GND 8
9 QH'
10 $\overline{\text{SCLR}}$
11 SCK
12 RCK
13 $\overline{\text{G}}$
14 SI
15 QA
16 VCC

2. Function Table

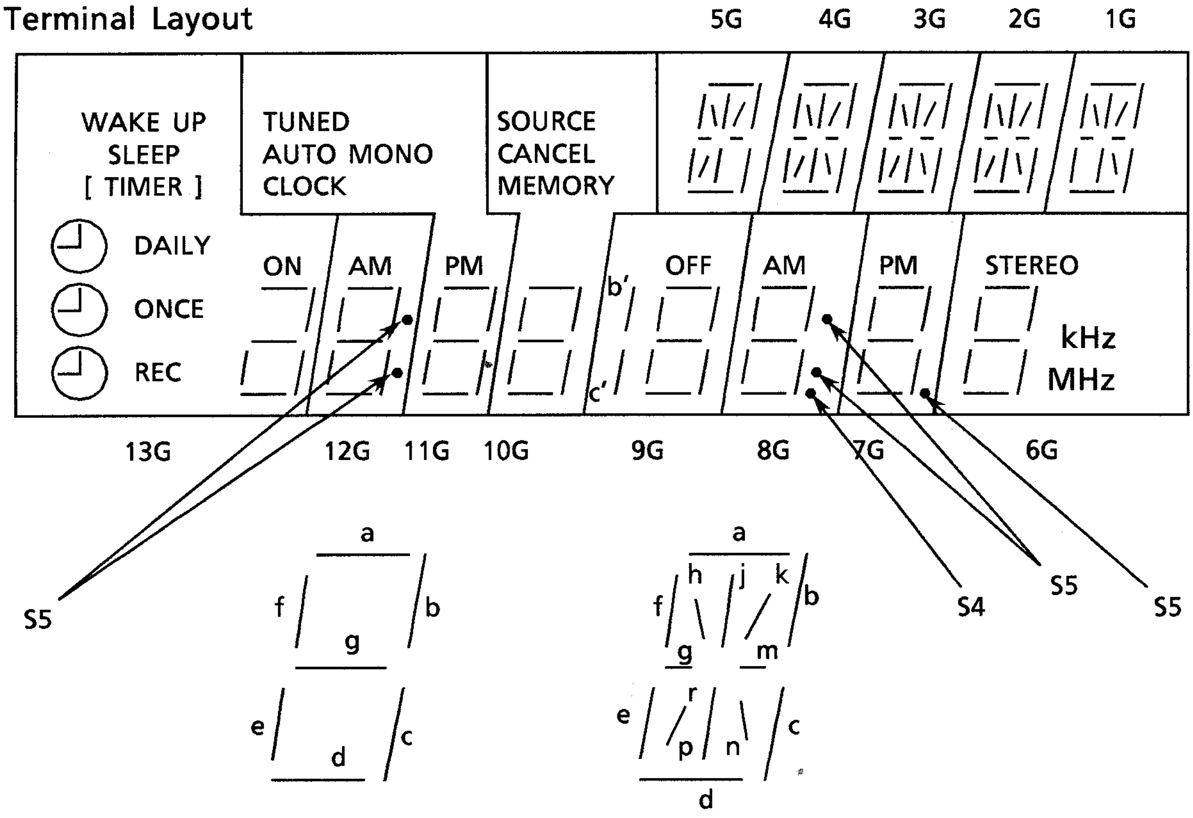
Inputs					Functions
SI	SCK	$\overline{\text{SCLR}}$	RCK	$\overline{\text{G}}$	
X	X	X	X	H	Output (QA-QH) disable.
X	X	X	X	L	Output (QA-QH) enable.
X	X	L	X	X	Shift register is cleared.
L	↑	H	X	X	Condition of shift register in initial stage is "L". In the other stages, data from the former stage is stored.
H	↑	H	X	X	Condition of shift register in initial stage is "H". In the other stages, data from the former stage is stored.
X	↓	H	X	X	Shift register does not change.
X	X	X	↑	X	Shift register data is stored in the storage register.
X	X	X	↓	X	Shift register does not change.

X : Don't care

Internal Wiring of FL Display

■ ELU0001-139 : (FL901)

1. Terminal Layout


5G
4G
3G
2G
1G
WAKE UP
SLEEP
[TIMER]
DAILY
ONCE
REC
TUNED
AUTO MONO
CLOCK
SOURCE
CANCEL
MEMORY
ON
AM
PM
b'
c'
OFF
AM
PM
STEREO
kHz
MHz
13G
12G
11G
10G
9G
8G
7G
6G
S5
S4
S5
S5
a
f
b
g
e
c
d
a
h
j
k
f
b
g
m
r
e
c
p
n
d

(6G~13G)

(1G~5G)

2. Anode Connection Table

	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
S1	d	d	d	d	d	d	d	d	d	d	d	d	d
S2	---	e	e	e	e	e	e	e	e	e	e	e	e
S3	c	c	c	c	c	c	c	c	c	c	c	c	c
S4	g	----	TUNED	----	b' c'	DP (.)	----	kHz	r	r	r	r	m
S5	b	DP(:)	AUTO	SOURCE	----	DP (:)	DP (.)	MHz	m	n	n	n	n
S6	DAILY&MARK	----	MONO	----	----	----	----	----	j p	j p	j p	j p	j p
S7	ONCE&MARK	g	g	g	g	g	g	g	g	g m	g m	g m	g
S8	REC&MARK	f	f	f	f	f	f	f	f	f	f	f	f
S9	WAKEUP	b	b	b	b	b	b	b	b	b	b	b	b
S10	SLEEP	a	a	a	a	a	a	a	a	a	a	a	a
S11	ON	----	CLOCK	CANCEL	OFF	----	----	----	h	h	h	h	h
S12	[TIMER]	AM	PM	MEMORY	----	AM	PM	STEREO	k	k	k	k	k

3. Pin Connections

Terminal No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
ELECTRODE	F1	F1	NP	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G				
Terminal No						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ELECTRODE						P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	NP	F2	F2

F : Filament G : Grid P : Anode NP : No Pin

Disassembly Procedures

■ Removing the metal cover

1. Remove the 2 screws Ⓐ fastening the both sides of the cover and 4 screws Ⓑ fixing the back of the cover to remove the cover.

■ Removing the front panel assembly

1. Remove the metal cover.
2. Remove the master volume knob to remove the nut fixing the volume. Disconnect the connector of the volume indicator at the same time.
3. Disconnect the connectors JB901, J202, J203, J204 and J205.
4. Remove the screw Ⓒ and release the 3 hooks to remove the assembly.

■ Removing the rear panel

1. Remove the 15 screws Ⓓ.
2. Disconnect the connector J703.
3. Release the 2 hooks to remove the rear panel.

※ When installing the rear panel, arrange the wire from the fan so that the wire does not disturb the fan operation (Figure 2).

■ Removing the main circuit board

1. Remove the front panel assembly.
2. Disconnect the connectors JB801 and J802.
3. Remove the rear panel.
4. Remove the 7 screws fixing the main circuit board to remove the circuit board.(If neccesary, remove the circuit boards on the main circuit board.)

■ Removing the front circuit board

1. Remove the front panel assembly.
2. Remove the balance and twin bass knobs.
3. Remove the 9 screws Ⓕ,Ⓖ fixing the front circuit board to remove the circuit board.

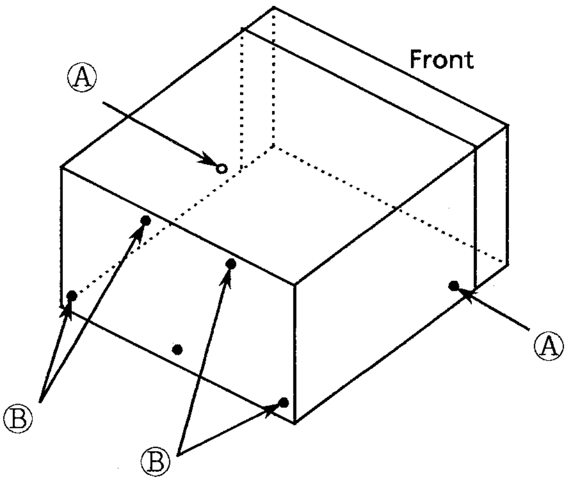


Figure 1

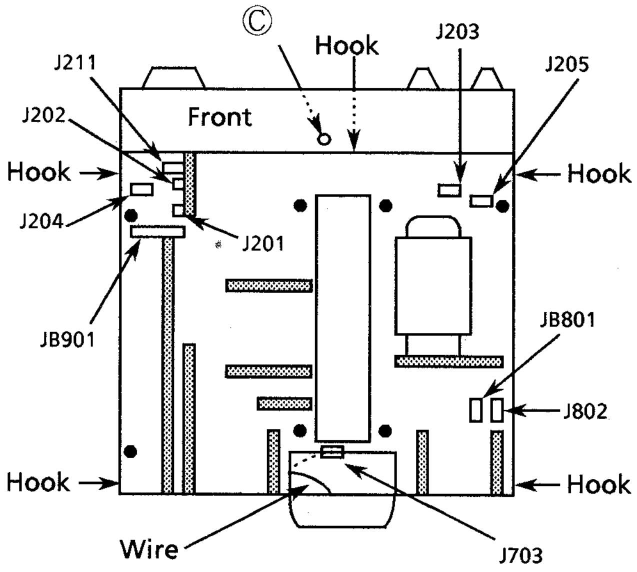


Figure 2 Top view

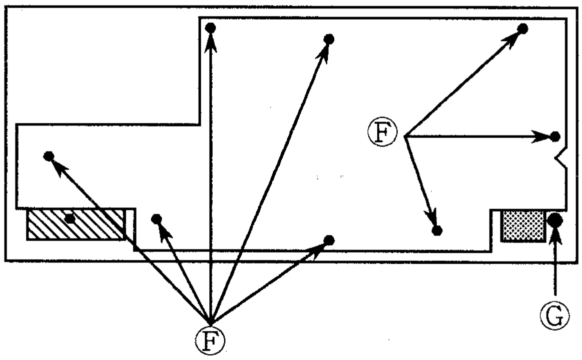


Figure 4 Behind the front panel assembly

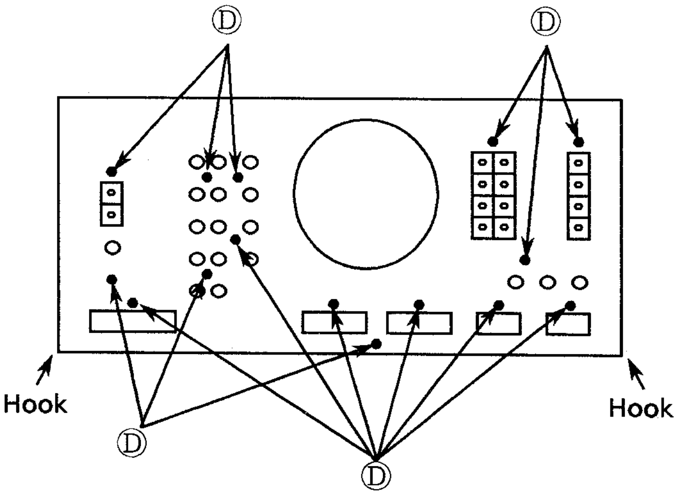
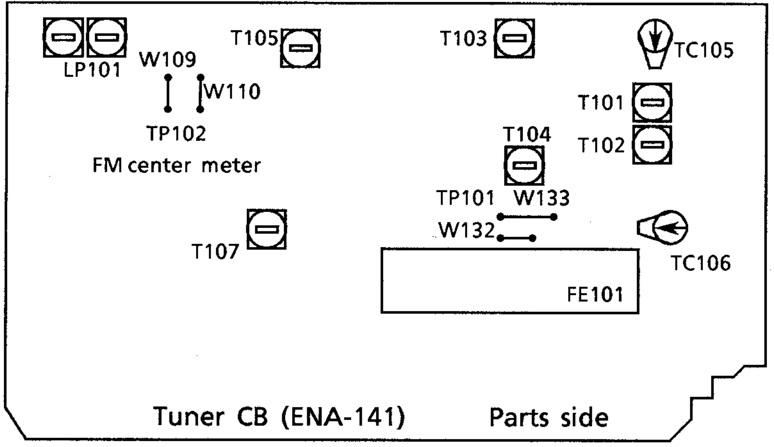


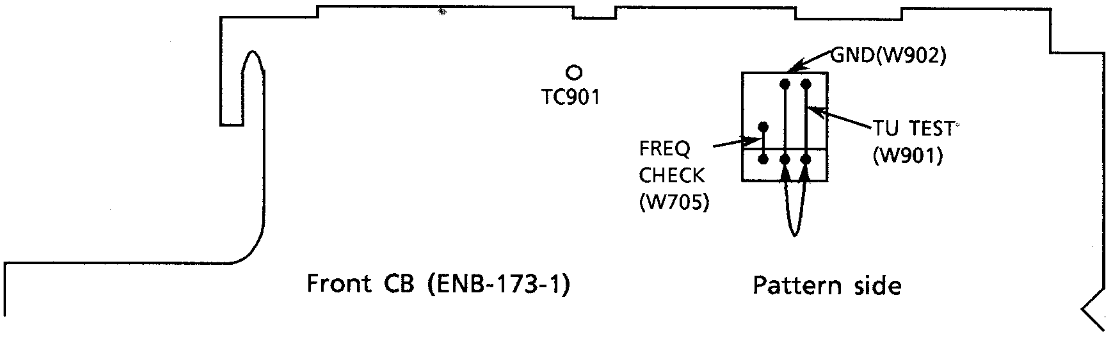
Figure 3 Rear panel

Adjustment Procedures


LP101
W109
T105
T103
TC105
W110
T101
TP102
FM center meter
T104
T102
TP101
W133
W132
T107
TC106
FE101
Tuner CB (ENA-141)
Parts side

Clock Adjustment

1. After connecting W901 and W902 with some wire, connect ac power cord into ac outlet.
2. Confirm that the display is off and remove the wire.
3. Connect a frequency counter to W705 and W902.
4. Adjust TC901 so that the frequency becomes 34952.5±0.15Hz.


GND(W902)
TC901
TU TEST
(W901)
FREQ
CHECK
(W705)
Front CB (ENB-173-1)
Pattern side

(1) Tuning voltage

Confirm the voltages at TP101 is within the standard values shown in the table below. If the voltages are not satisfied, replace FE101 for FM, adjust T103 for MW and adjust T104 for LW.

FM Tuning voltage (Unit : V)

Area	Frequency			
	64.0MHz	74.0MHz	87.5MHz	108MHz
East Europe	—	—	—	—
the U.K., Continental Europe, Australia, Universal	—	—	1.6±1.0 (V)	8.0±2.0 (V)

AM Tuning voltage (Unit : V)

Area	Frequency (MW)				Frequency (LW)		
	522kHz	531kHz	1602kHz	1629kHz	144kHz	290kHz	353kHz
Italy	0.9±0.2	—	—	7.5±0.8	0.8±0.4	5.7±0.6	—
the U.K., Continental Europe	0.9±0.2	—	—	7.5±0.8	0.8±0.4	—	8.0±0.9
Australia	0.9±0.2	—	—	7.5±0.8	—	—	—
Universal (Chanel space 9kHz)	—	1.0±0.2	7.2±0.7	—	—	—	—

(2) FM center meter

Receive a broadcast by using the function of 'AUTO STOP'.

Adjust T105 (detector coil) so that the voltage at TP102 becomes 0±1.5mV.

(3) MW Tracking

Adjust T101 (antenna coil) to obtain the best receiving sensitivity on 603kHz.

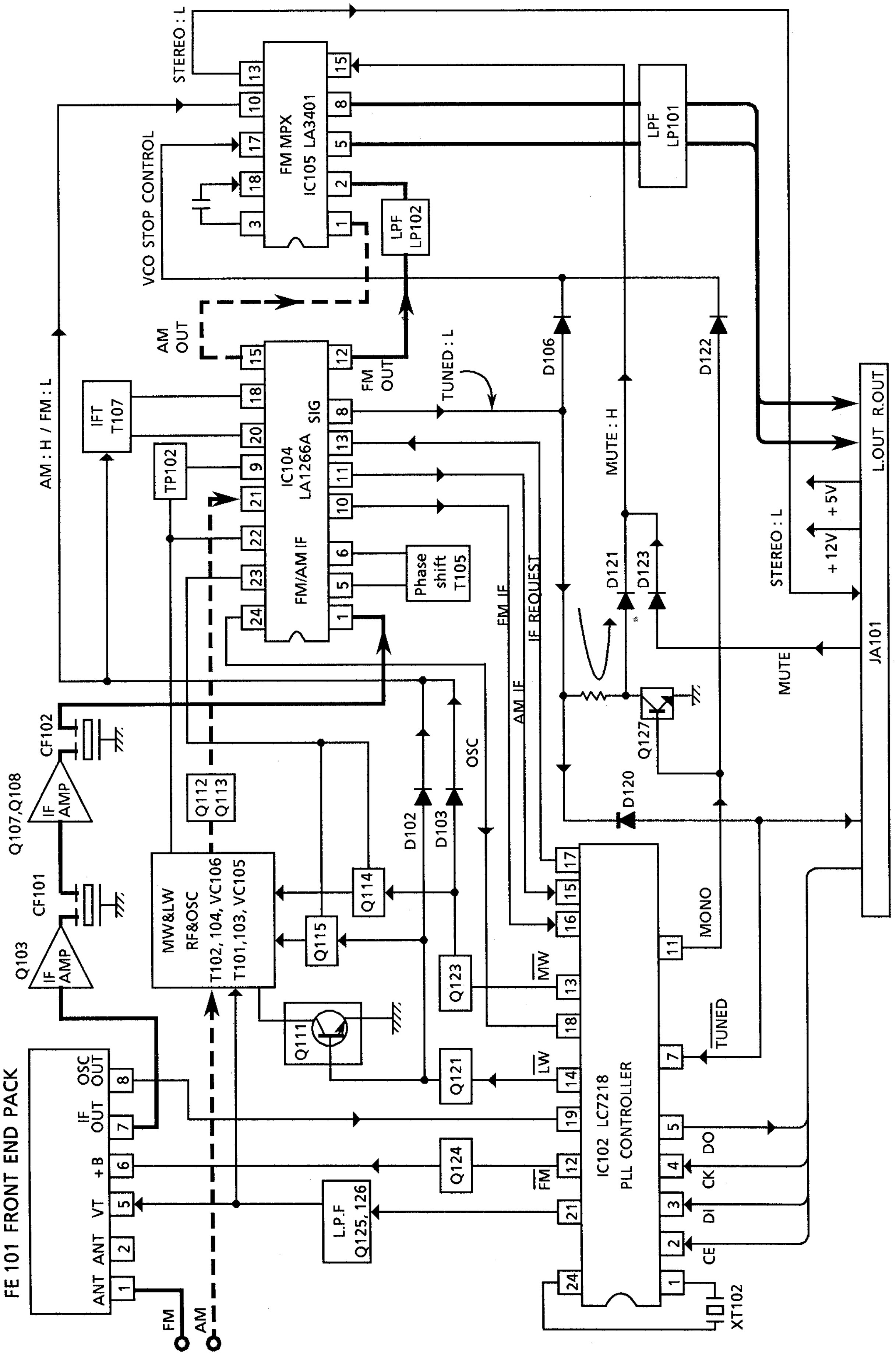
Adjust TC105 (antenna trimmer) to obtain the best receiving sensitivity on 1404kHz.

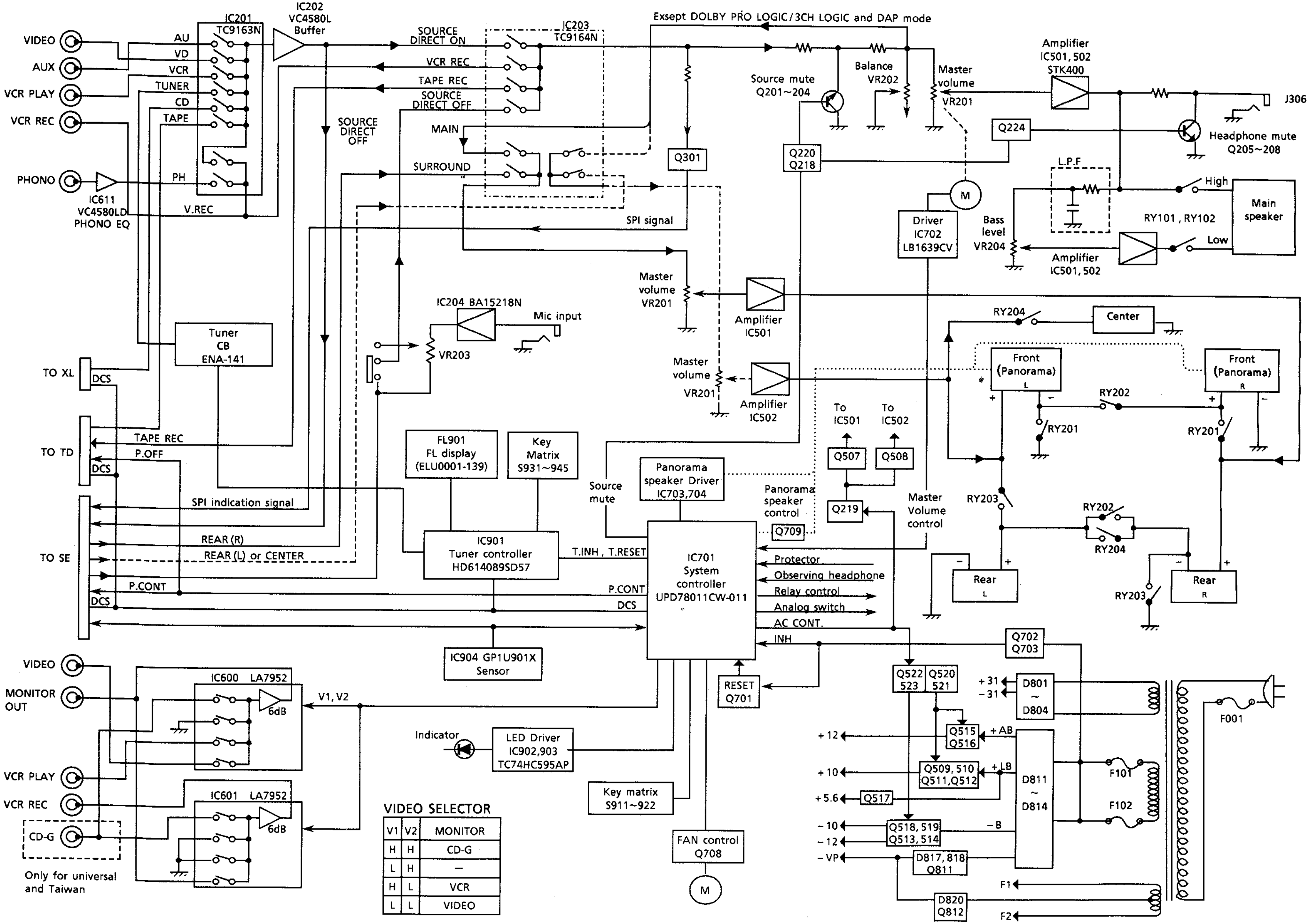
(4) LW Tracking

Adjust T102 (antenna coil) to obtain the best receiving sensitivity on 164kHz.

Adjust TC106 (antenna trimmer) to obtain the best receiving sensitivity on 353kHz or 245kHz.

Block Diagram

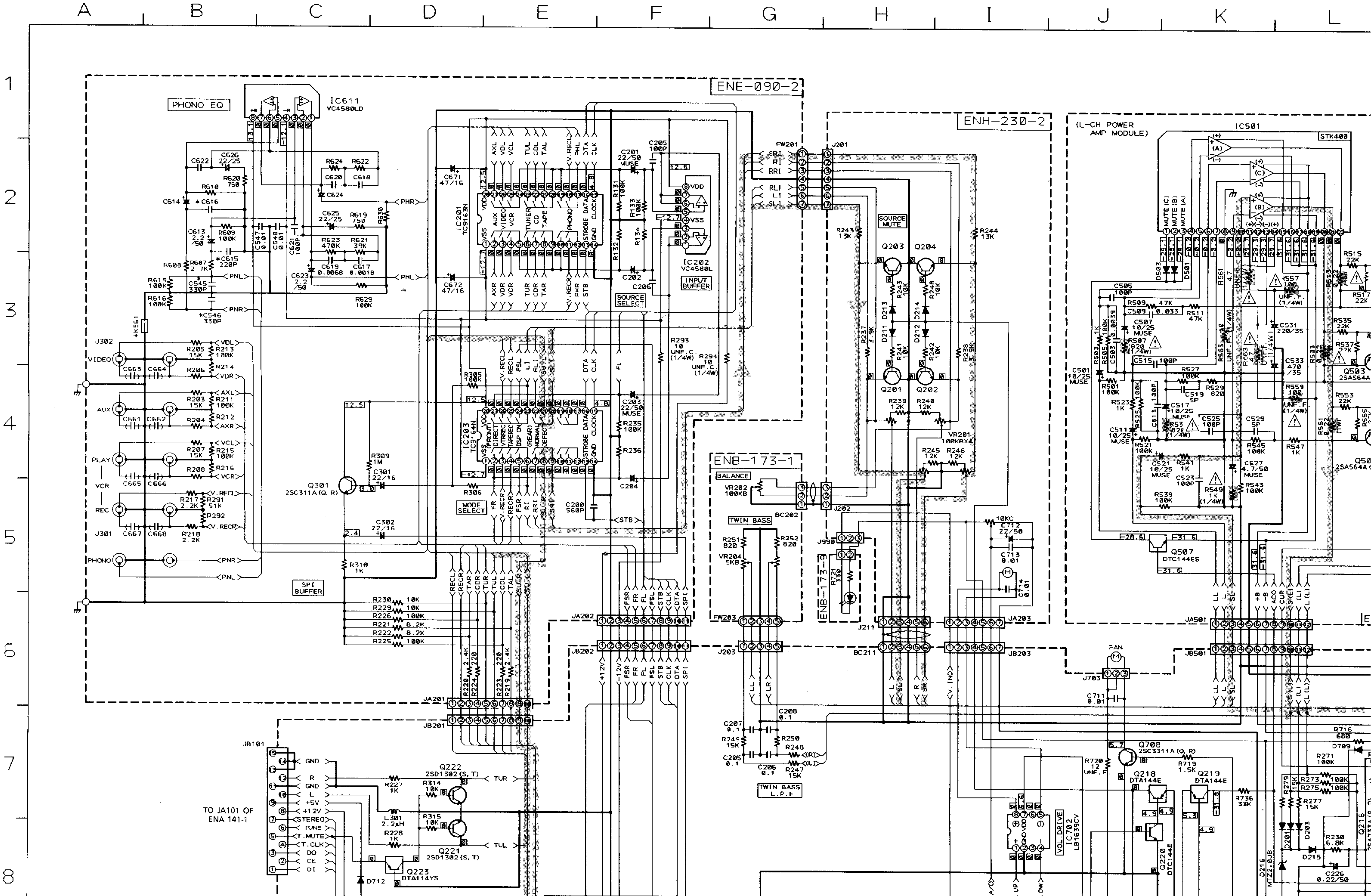

FE 101 FRONT END PACK
ANT
ANT
VT
+B
IF OUT
OSC OUT
1
2
5
6
7
8
FM
AM
Q103
IF AMP
CF101
Q107,Q108
IF AMP
CF102
MW&LW
RF&OSC
T102, 104, VC106
T101,103, VC105
Q112
Q113
Q111
Q114
Q115
Q121
Q123
Q124
L.P.F
Q125,126
D102
D103
OSC
AM : H / FM : L
IFT
T107
TP102
IC104
LA1266A
FM/AM IF
SIG
AM OUT
FM OUT
15
18
20
9
21
22
23
24
12
8
13
11
10
6
5
1
Phase shift
T105
TUNED : L
FM IF
IF REQUEST
AM IF
FM MPX
IC105 LA3401
STEREO : L
VCO STOP CONTROL
13
10
17
18
3
15
8
5
2
1
LPF
LP102
LPF
LP101
D106
D122
MUTE : H
D121
D123
Q127
D120
IC102 LC7218
PLL CONTROLLER
17
15
16
13
18
14
19
12
21
24
11
7
5
4
3
2
1
MW
LW
FM
MONO
TUNED
DO
CK
DI
CE
XT102
JA101
L.OUT
R.OUT
STEREO : L
+12V
+5V
MUTE

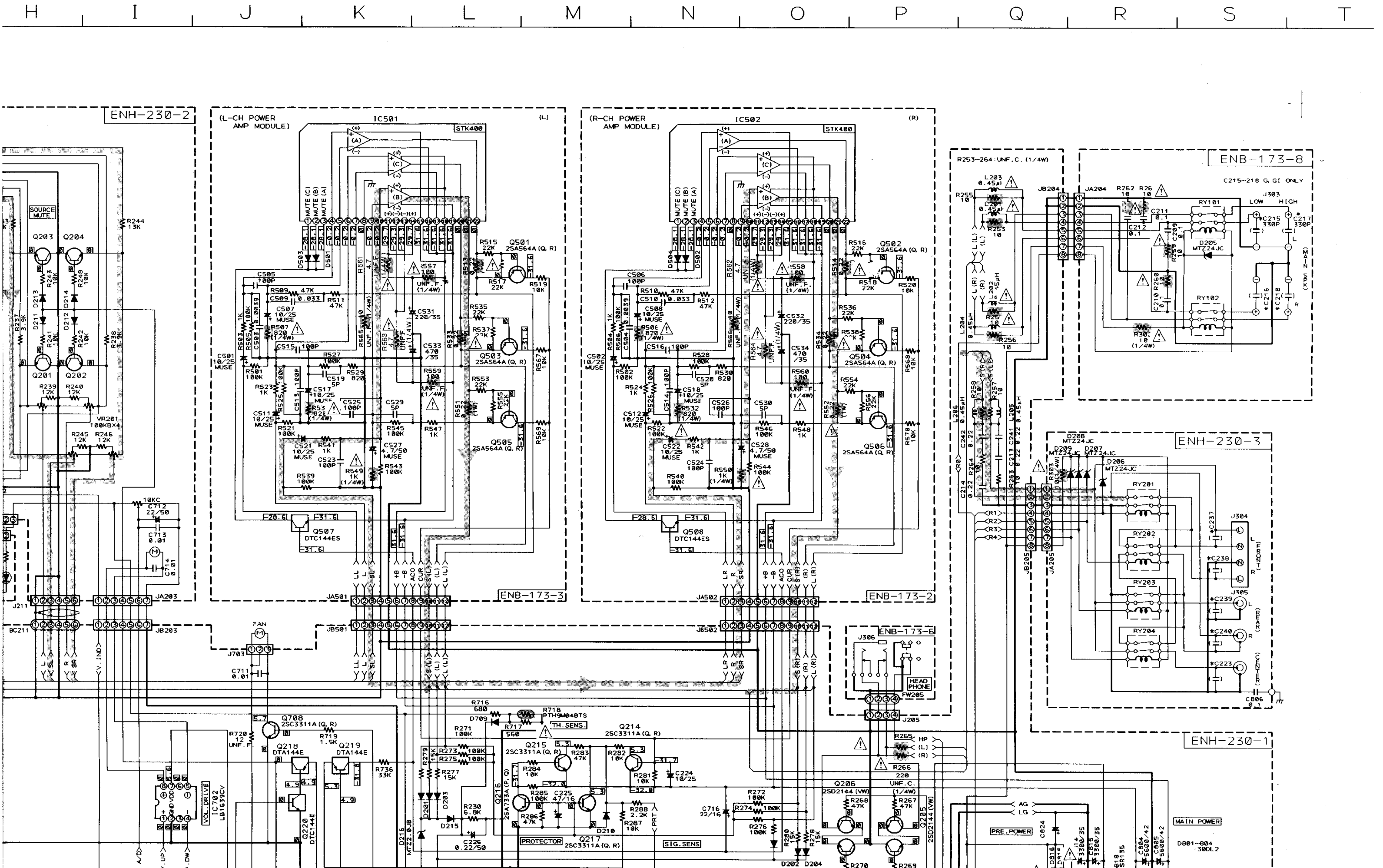

VIDEO
AUX
VCR PLAY
VCR REC
PHONO
IC611
VC4580LD
PHONO EQ
IC201
TC9163N
AU
VD
VCR
TUNER
CD
TAPE
PH
V.REC
IC202
VC4580L
Buffer
SOURCE DIRECT ON
VCR REC
TAPE REC
SOURCE DIRECT OFF
SOURCE DIRECT OFF
MAIN
SURROUND
IC203
TC9164N
Exsept DOLBY PRO LOGIC/3CH LOGIC and DAP mode
Q301
SPI signal
Source mute
Q201~204
Q220
Q218
Balance
VR202
Master volume
VR201
M
Driver
IC702
LB1639CV
Amplifier
IC501, 502
STK400
Q224
J306
Headphone mute
Q205~208
L.P.F
High
Low
Main speaker
RY101, RY102
Bass level
VR204
Amplifier
IC501, 502
Master volume
VR201
Amplifier
IC501
Master volume
VR201
Amplifier
IC502
IC204 BA15218N
Mic input
VR203
Tuner
CB
ENA-141
TO XL
DCS
TO TD
TAPE REC
P.OFF
DCS
TO SE
SPI indication signal
REAR (R)
REAR (L) or CENTER
P.CONT
DCS
FL901
FL display
(ELU0001-139)
Key Matrix
S931~945
IC901
Tuner controller
HD614089SD57
T.INH, T.RESET
P.CONT
DCS
IC904 GP1U901X
Sensor
Source mute
Panorama speaker Driver
IC703, 704
Panorama speaker control
Q709
To IC501
To IC502
Q507
Q508
Q219
Master Volume control
IC701
System controller
UPD78011CW-011
Protector
Observing headphone
Relay control
Analog switch
AC CONT.
INH
RESET
Q701
RY204
Center
Front (Panorama) L
Front (Panorama) R
RY202
RY201
RY201
RY203
RY202
RY204
RY203
Rear L
Rear R
Q702
Q703
Q522
523
Q520
521
D801
~
D804
+31
−31
+AB
+LB
−B
Q515
Q516
Q509, 510
Q511, Q512
Q517
Q518, 519
Q513, 514
D817, 818
Q811
D820
Q812
D811
~
D814
+12
+10
+5.6
−10
−12
−VP
F1
F2
F101
F102
F001
VIDEO
MONITOR OUT
VCR PLAY
VCR REC
CD-G
Only for universal and Taiwan
IC600 LA7952
6dB
IC601 LA7952
6dB
V1, V2
Indicator
LED Driver
IC902, 903
TC74HC595AP
Key matrix
S911~922
FAN control
Q708
M
VIDEO SELECTOR

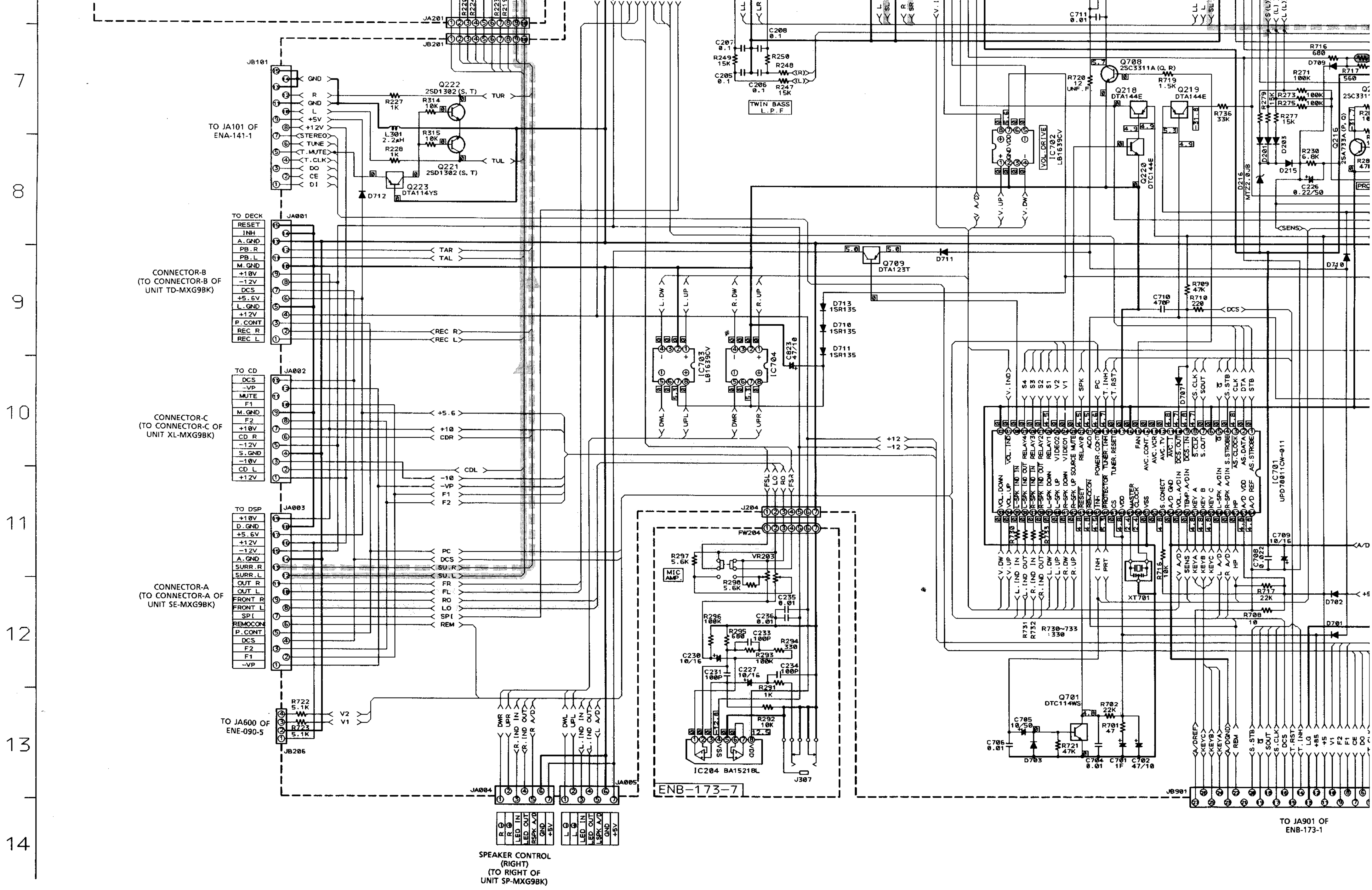
V1	V2	MONITOR
H	H	CD-G
L	H	−
H	L	VCR
L	L	VIDEO

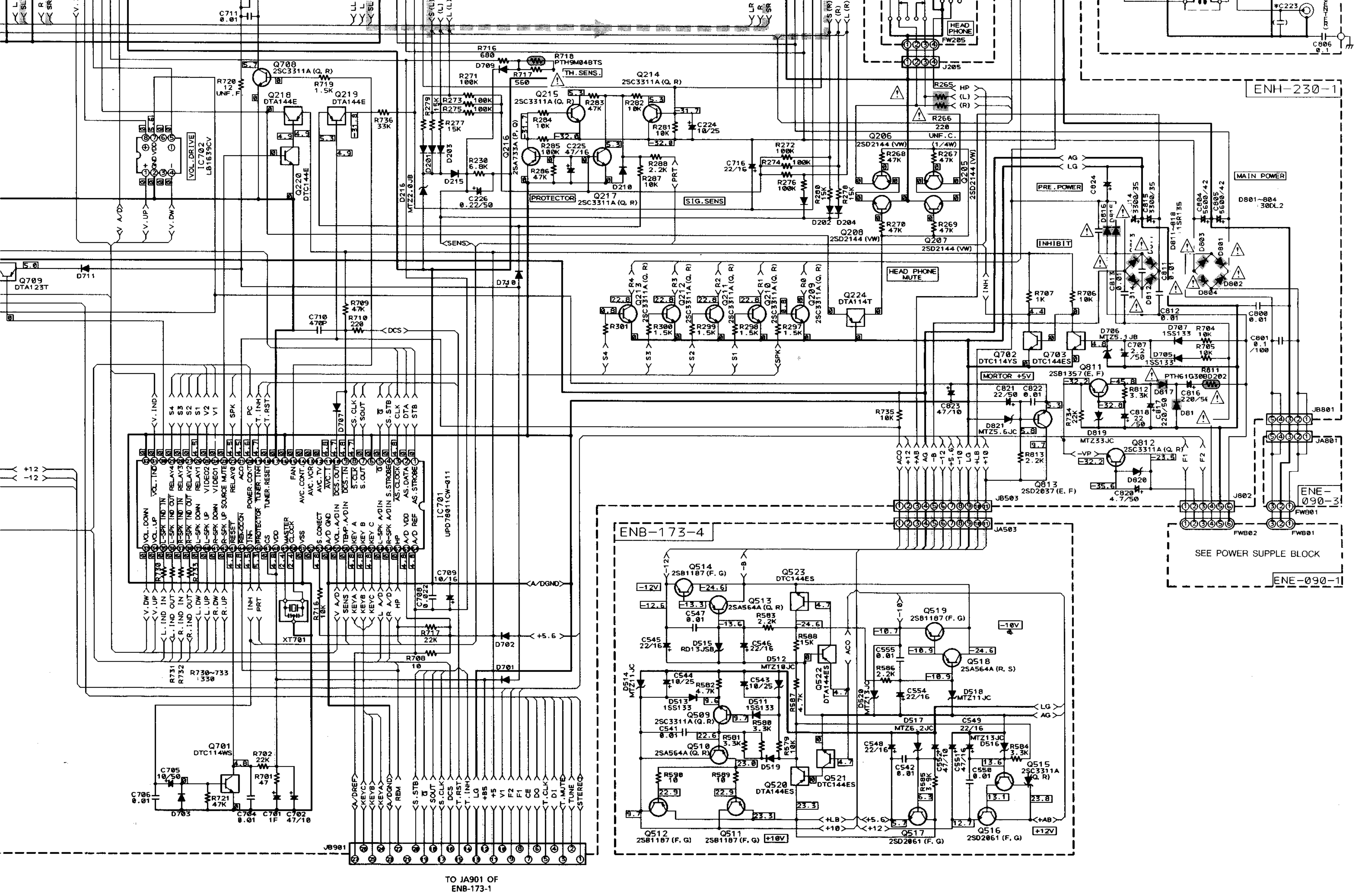
Schematic Diagrams

(1) Main, Input/Output & Power Amplifier Section

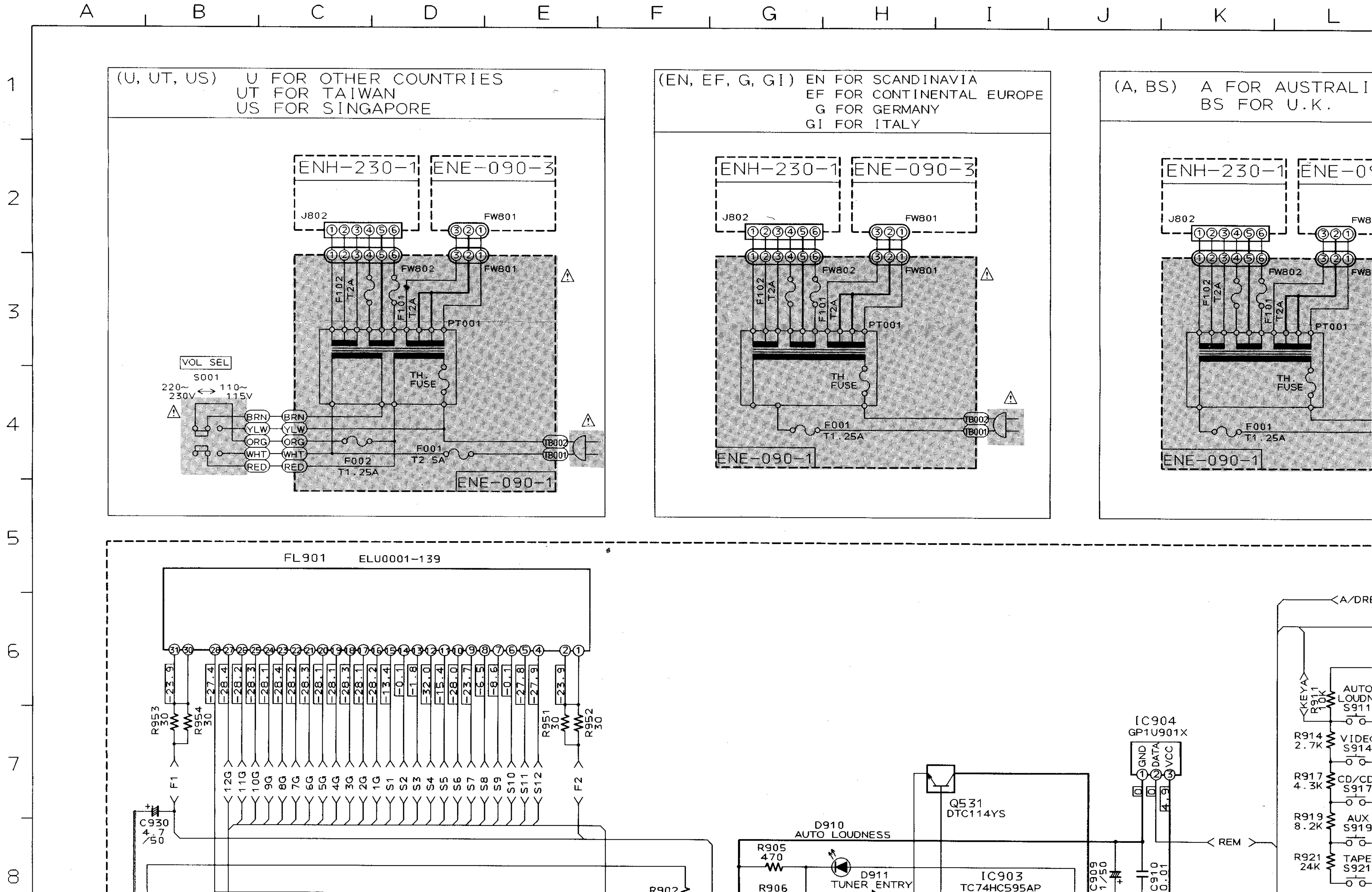

A
B
C
D
E
F
G
H
I
J
K
L
1
2
3
4
5
6
7
8
ENE-090-2
ENH-230-2
ENB-173-1
ENB-173-3
PHONO EQ
IC611
VC4580LD
IC201
TC9163N
IC202
VC4580L
INPUT BUFFER
SOURCE SELECT
IC203
TC9164N
MODE SELECT
SPI BUFFER
Q301
2SC311A (Q, R)
SOURCE MUTE
Q203
Q204
Q201
Q202
VR201
100KBX4
BALANCE
VR202
100KB
TWIN BASS
VR204
5KB
TWIN BASS L.P.F
(L-CH POWER AMP MODULE)
IC501
STK400
Q503
2SA564A
Q507
DTC144ES
J302
VIDEO
AUX
PLAY
VCR
REC
J301
PHONO
FW201
J201
J202
BC202
J990
FW203
J211
BC211
JA202
JB202
J203
JA203
JB203
JA501
JB501
JA201
JB201
JB101
FAN
J703
TO JA101 OF ENA-141-1
GND
R
GND
L
+5V
+12V
STEREO
TUNE
T.MUTE
T.CLK
DO
CE
DI
Q222
2SD1302 (S, T)
Q221
2SD1302 (S, T)
Q223
DTA114YS
D712
TUR
TUL
L301
2.2μH
VOL. DRIVE
IC702
LB1639CV
Q708
2SC3311A (Q, R)
Q218
DTA144E
Q219
DTA144E
Q220
DTC144E
D709
D201
D203
D215
D216
MTZ2.0JB


H
I
J
K
L
M
N
O
P
Q
R
S
T
ENH-230-2
SOURCE MUTE
Q203
Q204
Q201
Q202
R244 13K
VR201 100KBX4
(L-CH POWER AMP MODULE)
IC501
STK400
(L)
Q501 2SA564A (Q, R)
Q503 2SA564A (Q, R)
Q505 2SA564A (Q, R)
Q507 DTC144ES
ENB-173-3
JA501
JB501
(R-CH POWER AMP MODULE)
IC502
STK400
(R)
Q502 2SA564A (Q, R)
Q504 2SA564A (Q, R)
Q506 2SA564A (Q, R)
Q508 DTC144ES
ENB-173-2
JA502
JB502
R253~264 : UNF.C. (1/4W)
JB204
JA204
ENB-173-8
C215~218 G, GI ONLY
J303
LOW
HIGH
RY101
RY102
D205 MTZ24JC
ENH-230-3
D206 MTZ24JC
D207 MTZ24JC
D208 MTZ24JC
D209 MTZ24JC
RY201
RY202
RY203
RY204
J304
J305
JB205
JA205
C806 0.1
ENB-173-6
J306
HEAD PHONE
FW205
J205
ENH-230-1
JA203
JB203
J211
BC211
FAN
J703
C711 0.01
C712 22/50
C713 0.01
C714 0.01
IC702 LB1639CV
VOL.DRIVE
Q708 2SC3311A (Q, R)
Q218 DTA144E
Q219 DTA144E
Q220 DTC144E
R720 12 UNF.F.
R719 1.5K
R736 33K
R716 680
D709
R718 PTH9M04BTS
TH. SENS.
R717 560
R271 100K
Q214 2SC3311A (Q, R)
Q215 2SC3311A (Q, R)
Q216 2SA733A (P, Q)
Q217 2SC3311A (Q, R)
PROTECTOR
SIG. SENS
D215
D216 MTZ22.0JB
D210
C716 22/16
Q206 2SD2144 (VW)
Q205 2SD2144 (VW)
R265
R266 220 UNF.C. (1/4W)
HP
(L)
(R)
D202
D204
PRE. POWER
MAIN POWER
D801~804 30DL2
AG
LG

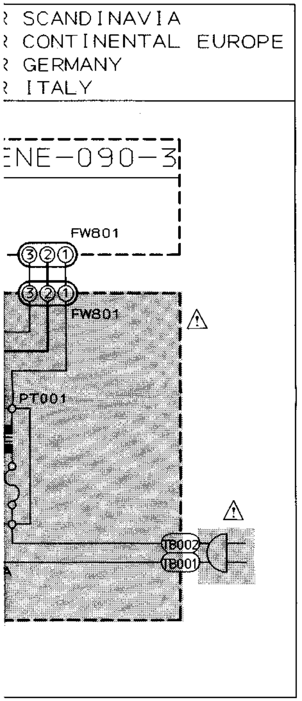

7
8
9
10
11
12
13
14
TO JA101 OF
ENA-141-1
JB101
GND
R
GND
L
+5V
+12V
STEREO
TUNE
T.MUTE
T.CLK
DO
CE
DI
JA201
JB201
Q222
2SD1302(S,T)
R227
1K
R314
10K
L301
2.2μH
R315
10K
R228
1K
Q221
2SD1302(S,T)
Q223
DTA114YS
D712
TUR
TUL
TO DECK
JA001
RESET
INH
A.GND
PB.R
PB.L
M.GND
+10V
-12V
DCS
+5.6V
L.GND
+12V
P.CONT
REC R
REC L
CONNECTOR-B
(TO CONNECTOR-B OF
UNIT TD-MXG9BK)
TAR
TAL
TO CD
JA002
DCS
-VP
MUTE
F1
M.GND
F2
+10V
CD R
-12V
S.GND
-10V
CD L
+12V
CONNECTOR-C
(TO CONNECTOR-C OF
UNIT XL-MXG9BK)
+5.6
+10
CDR
CDL
-10
-VP
F1
F2
TO DSP
JA003
+10V
D.GND
+5.6V
+12V
-12V
A.GND
SURR.R
SURR.L
OUT R
OUT L
FRONT R
FRONT L
SPI
REMOCON
P.CONT
DCS
F2
F1
-VP
CONNECTOR-A
(TO CONNECTOR-A OF
UNIT SE-MXG9BK)
PC
DCS
SU.R
SU.L
FR
FL
RO
LO
SPI
REM
TO JA600 OF
ENE-090-5
R722
5.1K
R723
5.1K
JB206
V2
V1
DWR
UPR
R.IND IN
R.IND OUT
R A/D
DWL
UPL
L.IND IN
L.IND OUT
L A/D
JA004
JA005
R
R
LED IN
LED OUT
RSPK A/D
GND
+5V
L
L
LED IN
LED OUT
LSPK A/D
GND
+5V
SPEAKER CONTROL
(RIGHT)
(TO RIGHT OF
UNIT SP-MXG9BK)
C207
0.1
R249
15K
C205
0.1
C208
0.1
R250
R248
R247
15K
C206
0.1
TWIN BASS
L.P.F
L.DW
L.UP
R.DW
R.UP
IC703
LB1639CV
IC704
C923
47/10
DWL
UPL
DWR
UPR
D713
1SR135
D710
1SR135
D711
1SR135
+12
-12
FSL
LO
RO
FSR
J204
FW204
ENB-173-7
R297
5.6K
MIC
AMP.
VR203
R298
5.6K
C235
0.01
C236
0.01
R296
100K
R295
680
C233
100P
R294
330
C230
10/16
R293
100K
C231
100P
C227
10/16
C234
100P
R291
1K
R292
10K
IC204 BA15218L
J307
C711
0.01
Q708
2SC3311A(Q,R)
R720
12
UNF.F
R719
1.5K
Q218
DTA144E
Q219
DTA144E
R736
33K
Q220
DTC144E
VOL DRIVE
IC702
LB1639CV
A/D
V.UP
V.DW
Q709
DTA123T
D711
D710
C710
470P
R709
47K
R710
220
DCS
R716
680
D709
R717
560
R271
100K
R279
15K
R273
100K
R275
100K
R277
15K
D201
D203
D215
R230
6.8K
C226
0.22/50
D216
MTZ2.0JB
Q216
2SA733A(P,Q)
SENS
V.IND
S4
S3
S2
S1
V2
V1
SPK
PC
T.INH
T.RST
D707
S.CLK
SOUT
SI
S.STB
CLK
DTA
STB
VOL.IND
RELAY3
RELAY2
RELAY1
VIDEO2
VIDEO1
SPK SOURCE MUTE
ACC
POWER.CONT
TUNER.INH
TUNER.RESET
FAN
AVC.CONT
AVC.VCR
AVC.TP
AVC.T
DCS.OUT
DCS.IN
S.CLK
S.OUT
S.IN
S.STROBE
AS.CLOCK
AS.DATA
AS.STROBE
VOL.DOWN
VOL.UP
L-SPK IND OUT
L-SPK IND IN
R-SPK IND OUT
R-SPK IND IN
R-SPK DOWN
L-SPK DOWN
L-SPK UP
R-SPK UP
RESET
REMOCON
INH
PROTECTOR
CS
VDD
MASTER CLOCK
VSS
S.CONECT
A/D GND
VOL.A/DIN
TEMP.A/DIN
KEY A
KEY B
KEY C
L-SPK A/DIN
R-SPK A/DIN
HP
VDD
A/D REF
IC701
UPD78011CW-011
R730
R733
V.DW
V.UP
L.IND IN
L.IND OUT
R.IND IN
R.IND OUT
L.DW
L.UP
R.DW
R.UP
INH
PRT
XT701
R715
10K
V A/D
SENS
KEYA
KEYB
KEYC
L A/D
R A/D
HP
C708
0.022
C709
10/16
R717
22K
R708
10
D702
D701
R731
R732
R730~733
:330
Q701
DTC114WS
R702
22K
C705
10/50
R701
47
C706
0.01
D703
R721
47K
C704
0.01
C701
1F
C702
47/10
JB901
A/DREF
KEYC
KEYB
KEYA
A/DGND
REM
S.STB
SI
SOUT
S.CLK
DCS
T.RST
T.INH
LO
+B5
V1
F2
F1
CE
DO
TO JA901 OF
ENB-173-1


ENH-230-1
ENB-173-4
ENE-090-3
ENE-090-1
SEE POWER SUPPLE BLOCK
IC701 UPD78011CW-011
IC702 LB1639CV
VOL.DRIVE
PROTECTOR
TH.SENS.
SIG.SENS
HEAD PHONE MUTE
HEAD PHONE
PRE.POWER
MAIN POWER
INHIBIT
MORTOR +5V
Q708 2SC3311A(Q, R)
Q214 2SC3311A(Q, R)
Q215 2SC3311A(Q, R)
Q216 2SA733A(P, Q)
Q217 2SC3311A(Q, R)
Q218 DTA144E
Q219 DTA144E
Q220 DTC144E
Q206 2SD2144 (VW)
Q205 2SD2144 (VW)
Q208 2SD2144 (VW)
Q207 2SD2144 (VW)
Q224 DTA114T
Q709 DTA123T
Q702 DTC114YS
Q703 DTC144ES
Q811 2SB1357(E, F)
Q812 2SC3311A(Q, R)
Q813 2SD2037(E, F)
Q701 DTC114WS
Q514 2SB1187(F, G)
Q513 2SA564A(Q, R)
Q523 DTC144ES
Q519 2SB1187(F, G)
Q518 2SA564A(R, S)
Q522 DTA144ES
Q509 2SC3311A(Q, R)
Q510 2SA564A(Q, R)
Q520 DTA144ES
Q521 DTC144ES
Q512 2SB1187(F, G)
Q511 2SB1187(F, G)
Q517 2SD2061(F, G)
Q516 2SD2061(F, G)
Q515 2SC3311A(Q, R)
D801~804 30DL2
R718 PTH9M04BTS
R811 PTH61G30BD202
XT701
R730~733 330
JB901
TO JA901 OF ENB-173-1

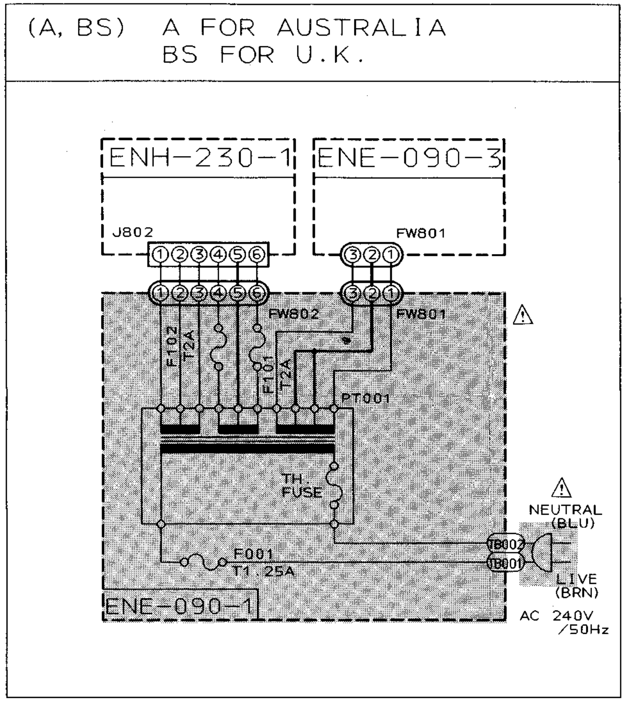
(2) Front Section


A
B
C
D
E
F
G
H
I
J
K
L
1
2
3
4
5
6
7
8
(U, UT, US) U FOR OTHER COUNTRIES
UT FOR TAIWAN
US FOR SINGAPORE
(EN, EF, G, GI) EN FOR SCANDINAVIA
EF FOR CONTINENTAL EUROPE
G FOR GERMANY
GI FOR ITALY
(A, BS) A FOR AUSTRALI
BS FOR U.K.
ENH-230-1
ENE-090-3
ENE-090-1
J802
FW801
FW802
F102 T2A
F101 T2A
PT001
TH. FUSE
VOL SEL
S001
220~ 230V ↔ 110~ 115V
BRN
YLW
ORG
WHT
RED
F001 T2.5A
F002 T1.25A
F001 T1.25A
TB001
TB002
FL901 ELU0001-139
R953 30
R954 30
R951 30
R952 30
F1
F2
C930 4.7/50
12G 11G 10G 9G 8G 7G 6G 5G 4G 3G 2G 1G S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12
-23.9 -27.4 -28.4 -28.2 -28.3 -28.1 -28.4 -28.2 -28.3 -28.1 -28.1 -28.3 -28.1 -28.2 -13.4 -0.1 -1.8 -32.0 -15.4 -28.0 -23.7 -6.5 -8.6 -0.1 -27.8 -27.9 -23.9
IC904 GP1U901X
GND DATA VCC
4.9
Q531 DTC114YS
D910 AUTO LOUDNESS
D911 TUNER ENTRY
R905 470
R906
IC903 TC74HC595AP
C909 1/50
C910 0.01
REM
R902
A/DRE
KEYA
R911 10K
AUTO LOUDN S911
R914 2.7K
VIDE S914
R917 4.3K
CD/CD S917
R919 8.2K
AUX S919
R921 24K
TAPE S921

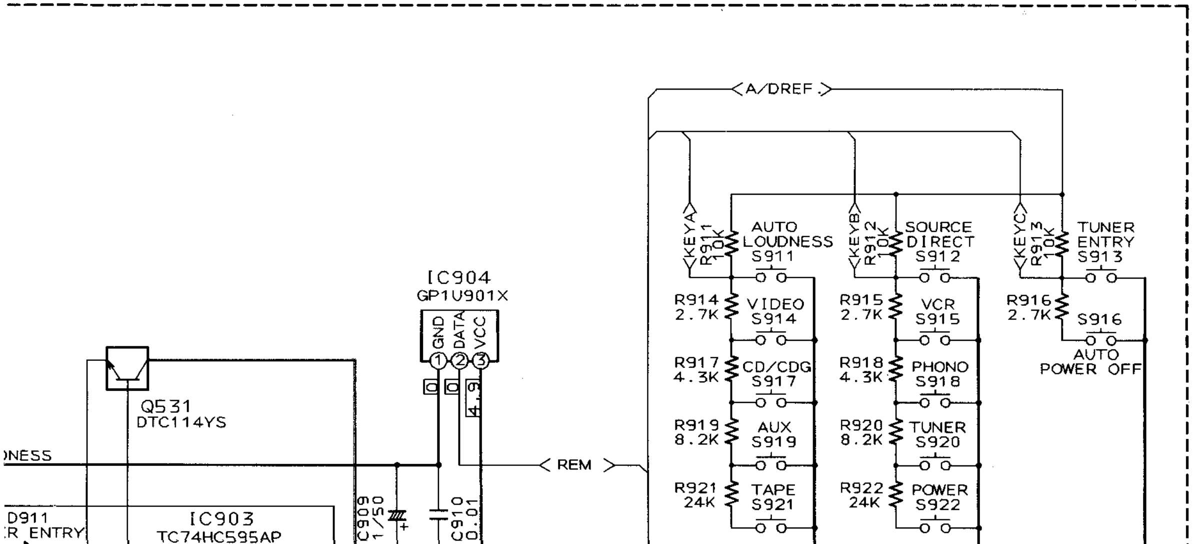
H I J K L M N O P Q R S T



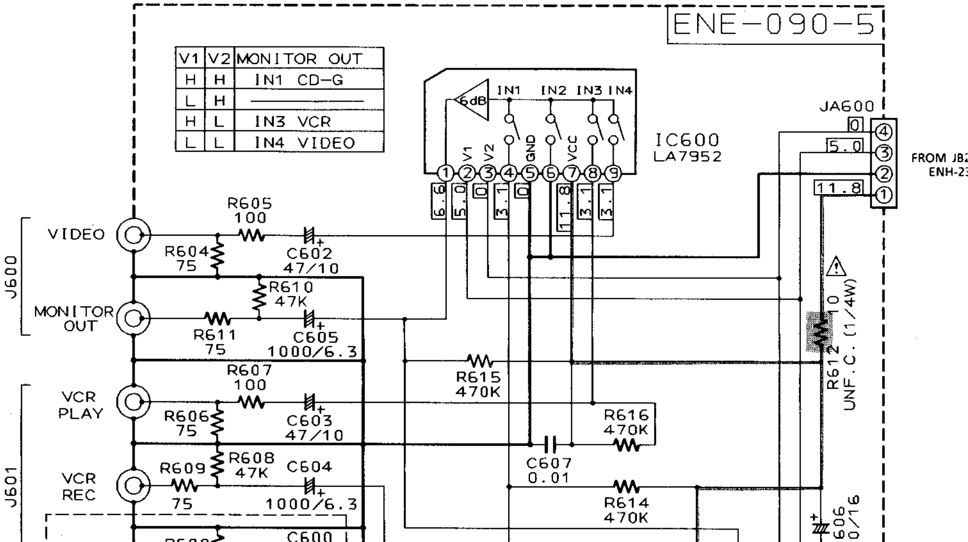
SCANDINAVIA
CONTINENTAL EUROPE
GERMANY
ITALY
ENE-090-3
FW801
FW801
PT001
TB002
TB001



(A, BS) A FOR AUSTRALIA
BS FOR U.K.
ENH-230-1
ENE-090-3
J802
FW801
FW802
FW801
F102 T2A
F101 T2A
PT001
TH FUSE
F001 T1.25A
TB002
TB001
NEUTRAL (BLU)
LIVE (BRN)
AC 240V /50Hz
ENE-090-1

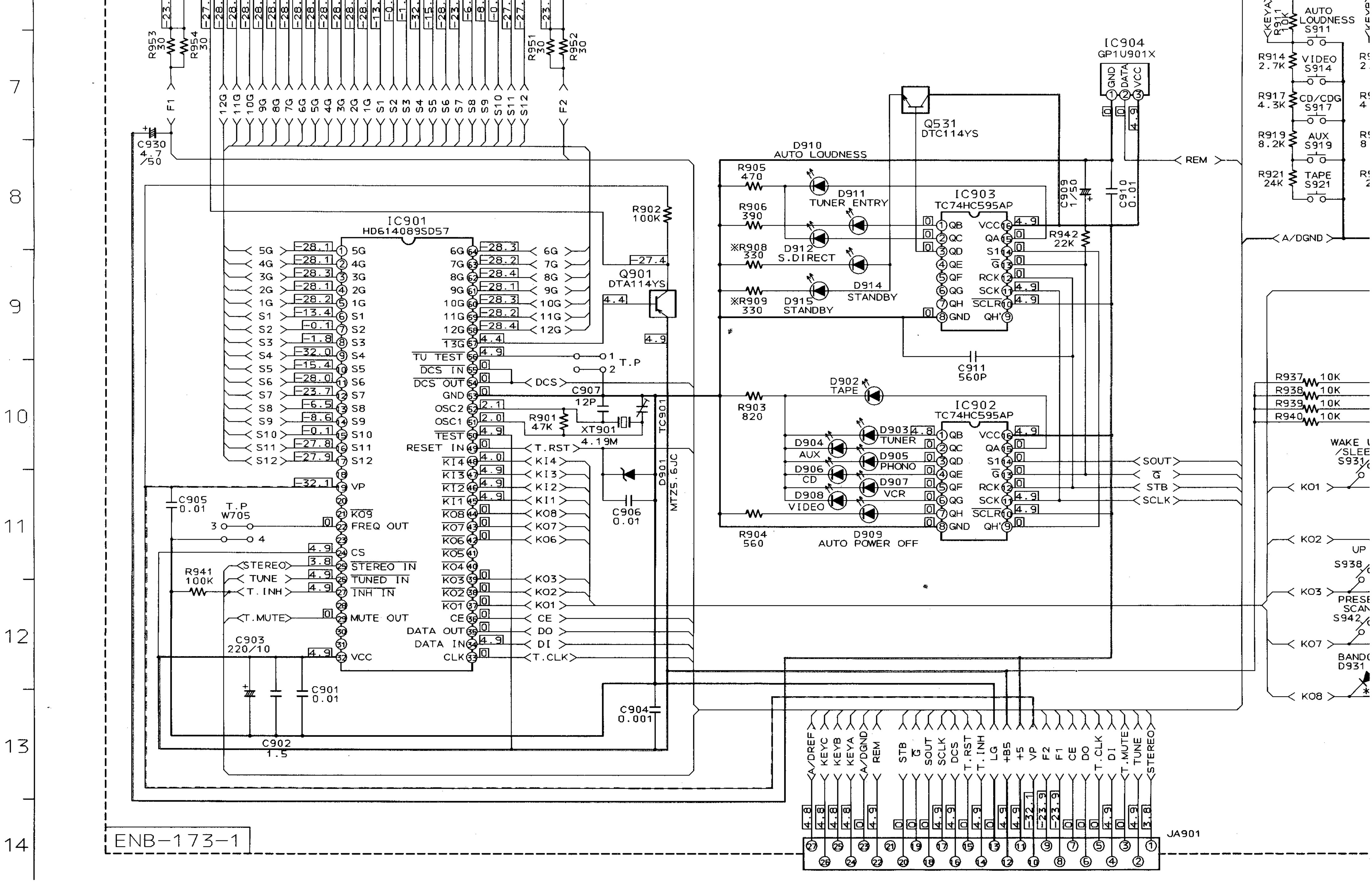


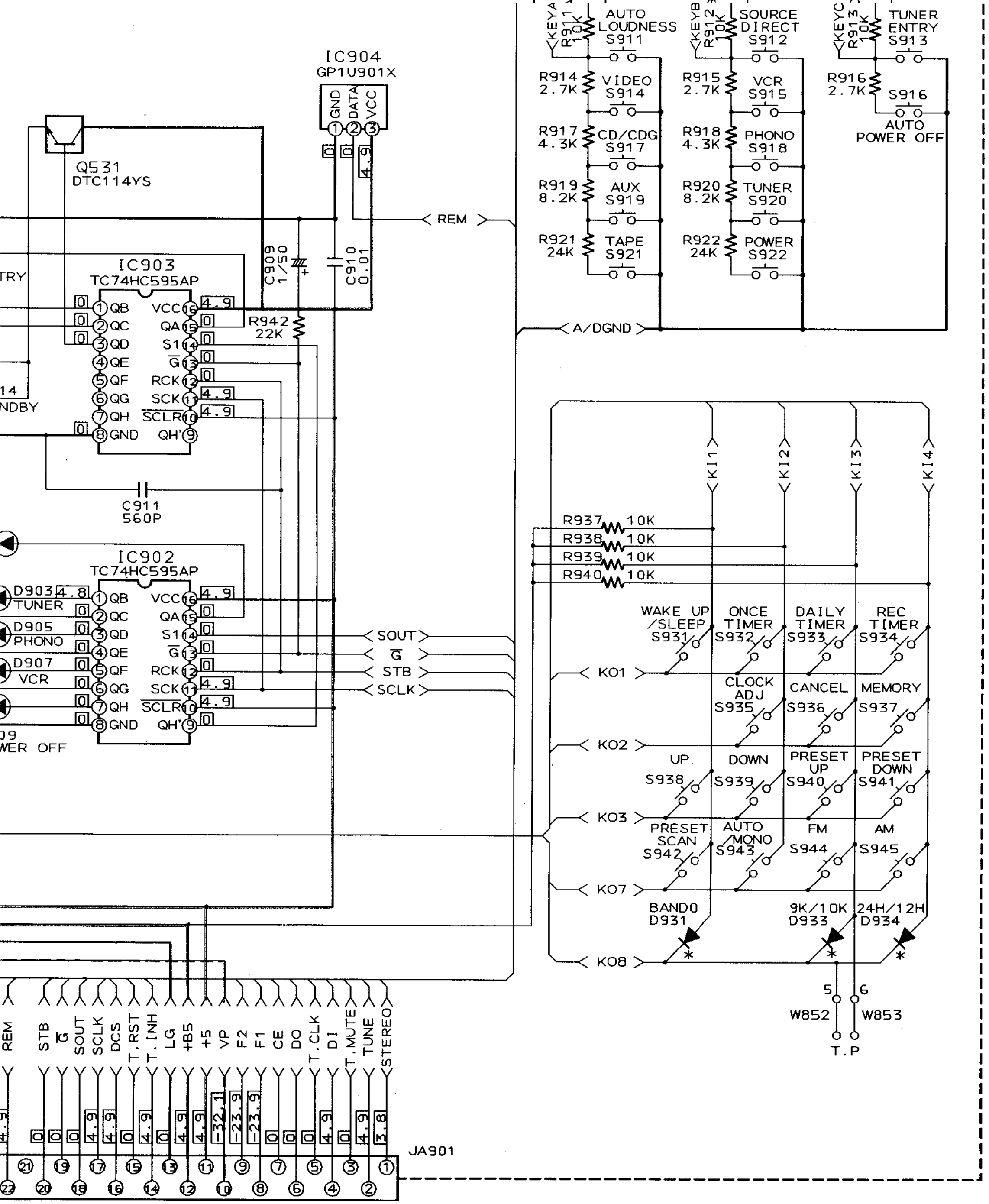
A/DREF
KEYA
KEYB
KEYC
R911 10K
AUTO LOUDNESS S911
R912 10K
SOURCE DIRECT S912
R913 10K
TUNER ENTRY S913
R914 2.7K
VIDEO S914
R915 2.7K
VCR S915
R916 2.7K
S916 AUTO POWER OFF
R917 4.3K
CD/CDG S917
R918 4.3K
PHONO S918
R919 8.2K
AUX S919
R920 8.2K
TUNER S920
R921 24K
TAPE S921
R922 24K
POWER S922
IC904 GP1U901X
GND DATA VCC
4.9
REM
Q531 DTC114YS
NESS
D911
R ENTRY
IC903 TC74HC595AP
C909 1/50
C910 0.01

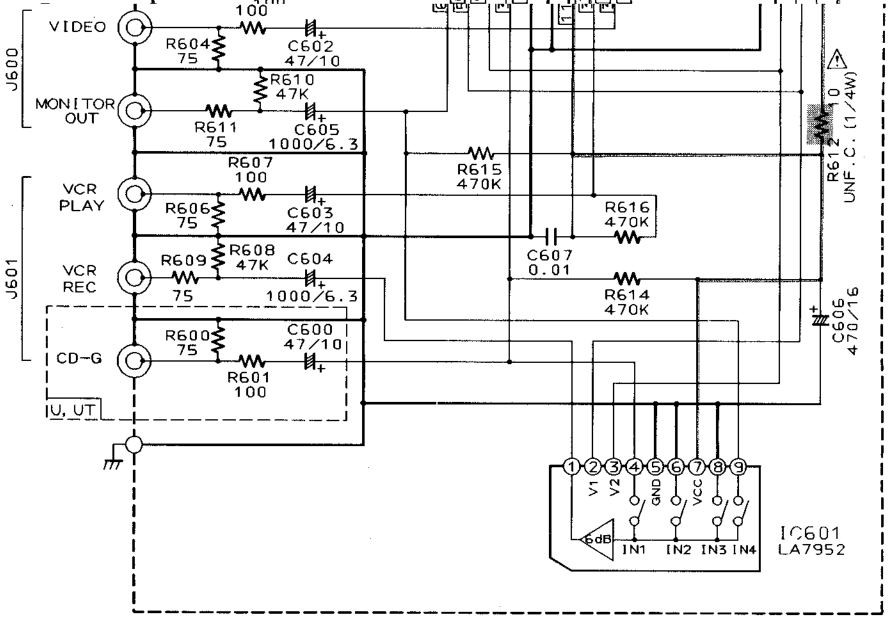


ENE-090-5
IC600 LA7952
IN1 IN2 IN3 IN4
6dB
V1 V2 GND VCC
6.6 5.0 0 3.1 0 11.8 3.1 3.1
JA600
0
5.0
11.8
FROM JB2 ENH-23
J600
VIDEO
MONITOR OUT
J601
VCR PLAY
VCR REC
R605 100
C602 47/10
R604 75
R610 47K
R611 75
C605 1000/6.3
R607 100
R615 470K
R606 75
C603 47/10
C607 0.01
R616 470K
R609 75
R608 47K
C604 1000/6.3
R614 470K
R612 10 UNF.C. (1/4W)
C606 0/16
C600

V1	V2	MONITOR OUT
H	H	IN1 CD-G
L	H	————
H	L	IN3 VCR
L	L	IN4 VIDEO


7
8
9
10
11
12
13
14
ENB-173-1
IC901
HD614089SD57
IC902
TC74HC595AP
IC903
TC74HC595AP
IC904
GP1U901X
GND
DATA
VCC
Q531
DTC114YS
Q901
DTA114YS
R902
100K
R901
47K
XT901
4.19M
C907
12P
TC901
D901
MTZ5.6JC
C906
0.01
C904
0.001
C903
220/10
C902
1.5
C901
0.01
C905
0.01
C930
4.7
/50
C909
1/50
C910
0.01
C911
560P
R941
100K
R942
22K
R953
30
R954
30
R951
30
R952
30
R903
820
R904
560
R905
470
R906
390
※R908
330
※R909
330
T.P
W705
D910
AUTO LOUDNESS
D911
TUNER ENTRY
D912
S.DIRECT
D914
STANDBY
D915
STANDBY
D902
TAPE
D903
TUNER
D904
AUX
D905
PHONO
D906
CD
D907
VCR
D908
VIDEO
D909
AUTO POWER OFF
VP
FREQ OUT
CS
STEREO IN
TUNED IN
INH IN
MUTE OUT
VCC
TU TEST
DCS IN
DCS OUT
GND
OSC2
OSC1
TEST
RESET IN
CE
DATA OUT
DATA IN
CLK
REM
A/DGND
SOUT
STB
SCLK
DCS
T.RST
T.CLK
T.MUTE
T.INH
TUNE
STEREO
AUTO LOUDNESS
S911
R914
2.7K
VIDEO
S914
R917
4.3K
CD/CDG
S917
R919
8.2K
AUX
S919
R921
24K
TAPE
S921
R937
R938
R939
R940
10K
WAKE U
/SLEE
S931
UP
S938
PRESE
SCAN
S942
BAND
D931
KO1
KO2
KO3
KO7
KO8
JA901
A/DREF
KEYC
KEYB
KEYA
A/DGND
REM
STB
G
SOUT
SCLK
DCS
T.RST
T.INH
LG
+B5
+5
VP
F2
F1
CE
DO
T.CLK
DI
T.MUTE
TUNE
STEREO


IC904
GP1U901X
GND DATA VCC
Q531
DTC114YS
REM
IC903
TC74HC595AP
QB QC QD QE QF QG QH GND
VCC QA S1 G RCK SCK SCLR QH'
R942
22K
C909
1/50
C910
0.01
C911
560P
IC902
TC74HC595AP
D903 TUNER
D905 PHONO
D907 VCR
SOUT
G
STB
SCLK
A/DGND
AUTO LOUDNESS S911
SOURCE DIRECT S912
TUNER ENTRY S913
R911 10K
R912 10K
R913 10K
R914 2.7K
VIDEO S914
R915 2.7K
VCR S915
R916 2.7K
S916
AUTO POWER OFF
R917 4.3K
CD/CDG S917
R918 4.3K
PHONO S918
R919 8.2K
AUX S919
R920 8.2K
TUNER S920
R921 24K
TAPE S921
R922 24K
POWER S922
KI1
KI2
KI3
KI4
R937 10K
R938 10K
R939 10K
R940 10K
WAKE UP /SLEEP S931
ONCE TIMER S932
DAILY TIMER S933
REC TIMER S934
KO1
CLOCK ADJ S935
CANCEL S936
MEMORY S937
KO2
UP S938
DOWN S939
PRESET UP S940
PRESET DOWN S941
KO3
PRESET SCAN S942
AUTO /MONO S943
FM S944
AM S945
KO7
BANDO D931
9K/10K D933
24H/12H D934
KO8
W852
W853
T.P
REM STB G SOUT SCLK DCS T.RST T.INH LG +B5 +5 VP F2 F1 CE DO T.CLK DI T.MUTE TUNE STEREO
JA901
-32.1
-23.9
3.8


J600
VIDEO
MONITOR OUT
R604 75
R610 47K
C602 47/10
R611 75
C605 1000/6.3
R607 100
J601
VCR PLAY
R606 75
C603 47/10
R608 47K
VCR REC
R609 75
C604 1000/6.3
CD-G
R600 75
C600 47/10
R601 100
U, UT
R615 470K
R616 470K
C607 0.01
R614 470K
C606 470/16
R612 10 UNF.C. (1/4W)
V1 V2 GND VCC
6dB
IN1 IN2 IN3 IN4
IC601
LA7952

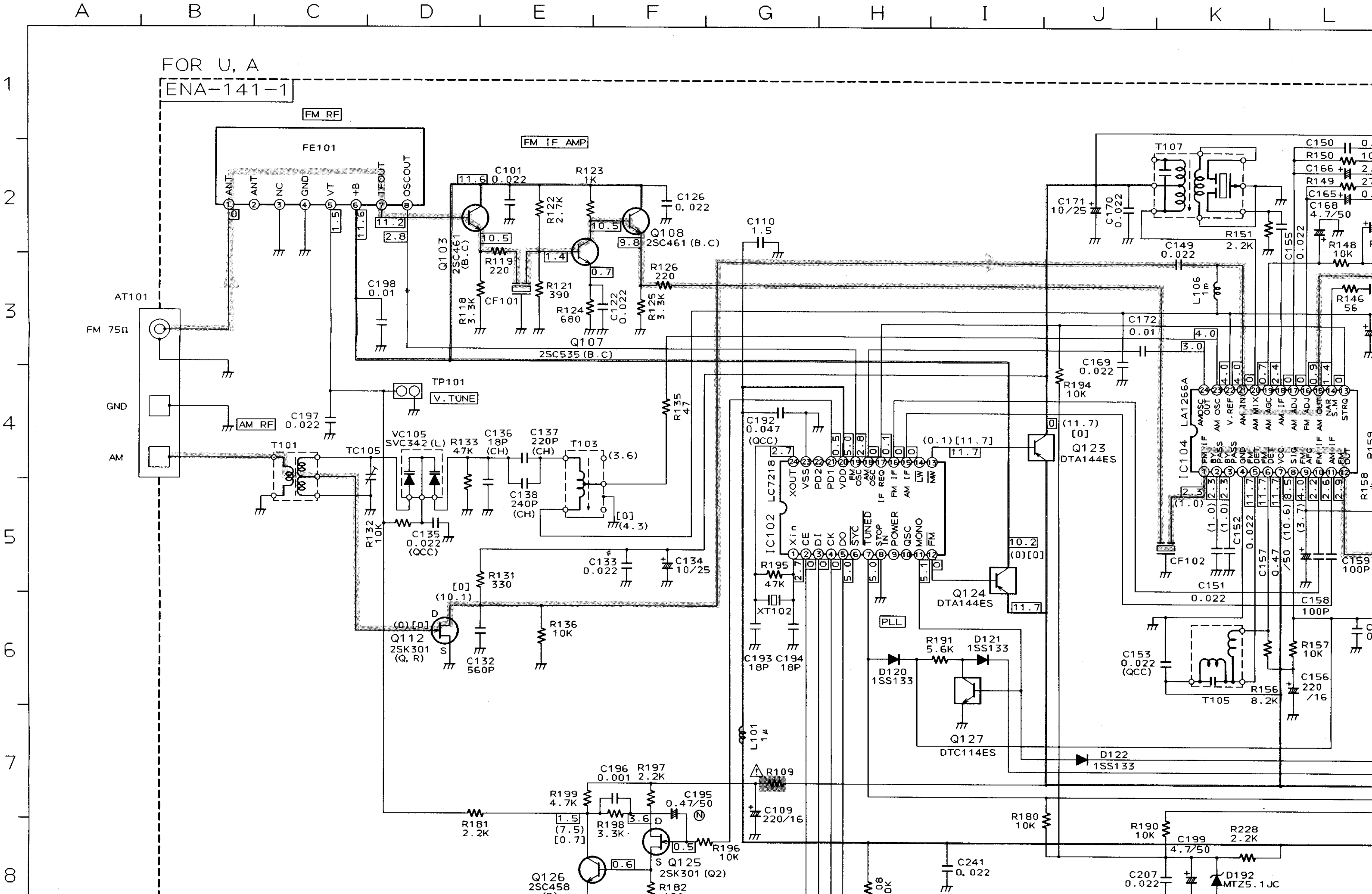
* MARK

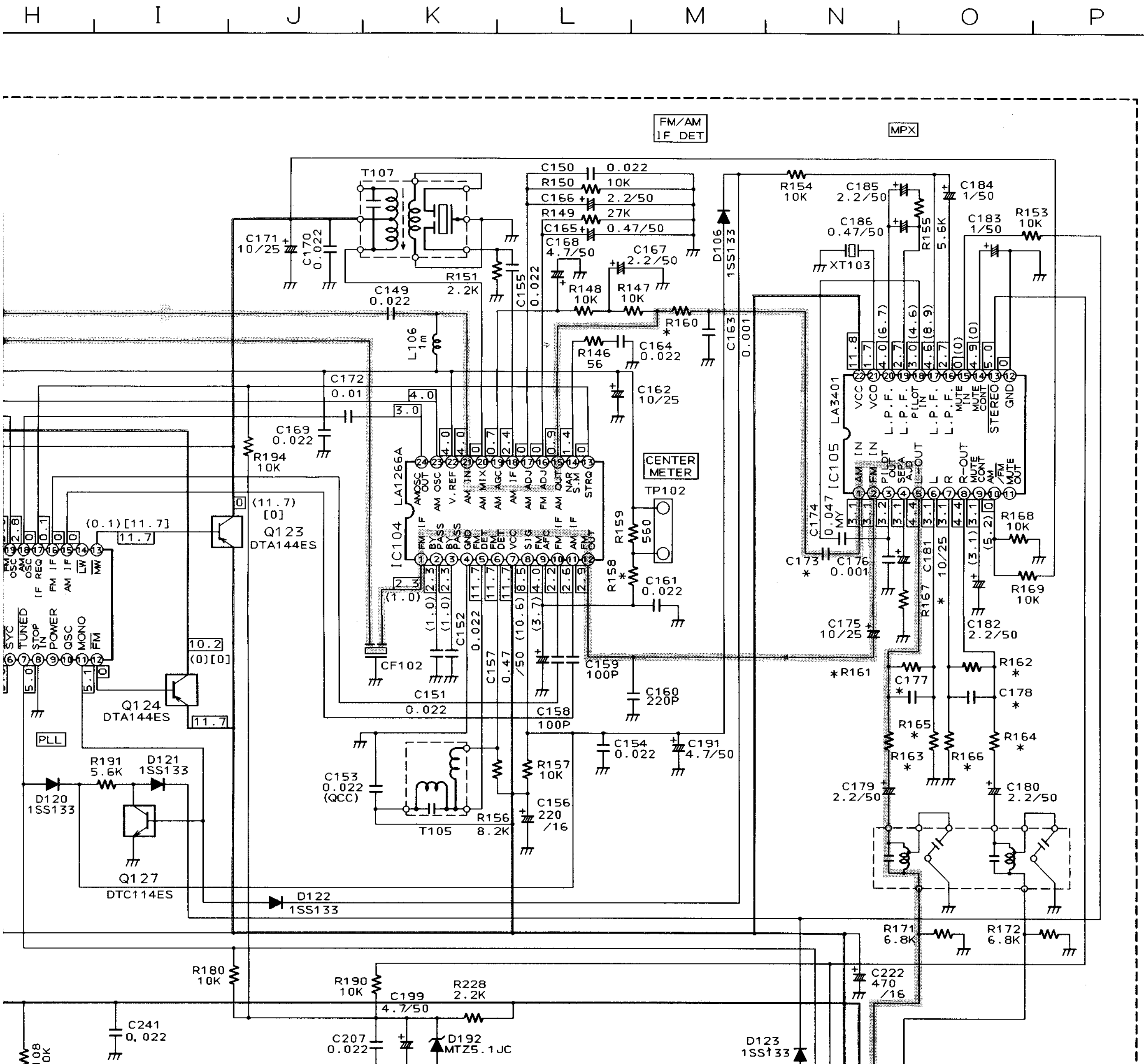
	U,UT,US	A	EF,EN	BS	G	GI
D931	USED	NONE	NONE	NONE	NONE	NONE
D933	USED	NONE	NONE	NONE	NONE	NONE
D934	NONE	NONE	NONE	NONE	NONE	USED
R908,909	330	330	330	220	330	330

Notes:

1. —— indicates + B power supply.
2. - - - - indicates – B power supply.
3. ▨ indicates main signal path.
4. ▨ indicates low frequency of main signal path.
5. ▨ indicates left signal path for front or rear surround and center signal path for dolby pro-logic.
6. ▨ indicates right signal path for front or rear surround and surround signal path for dolby pro-logic.
7. When replacing the parts in the shaded are (▨) and those marked with ⚠ , be sure to use the designated parts to ensure safety.
8. The design and contents are subject to change without notice.

(3) Tuner Section (without LW)

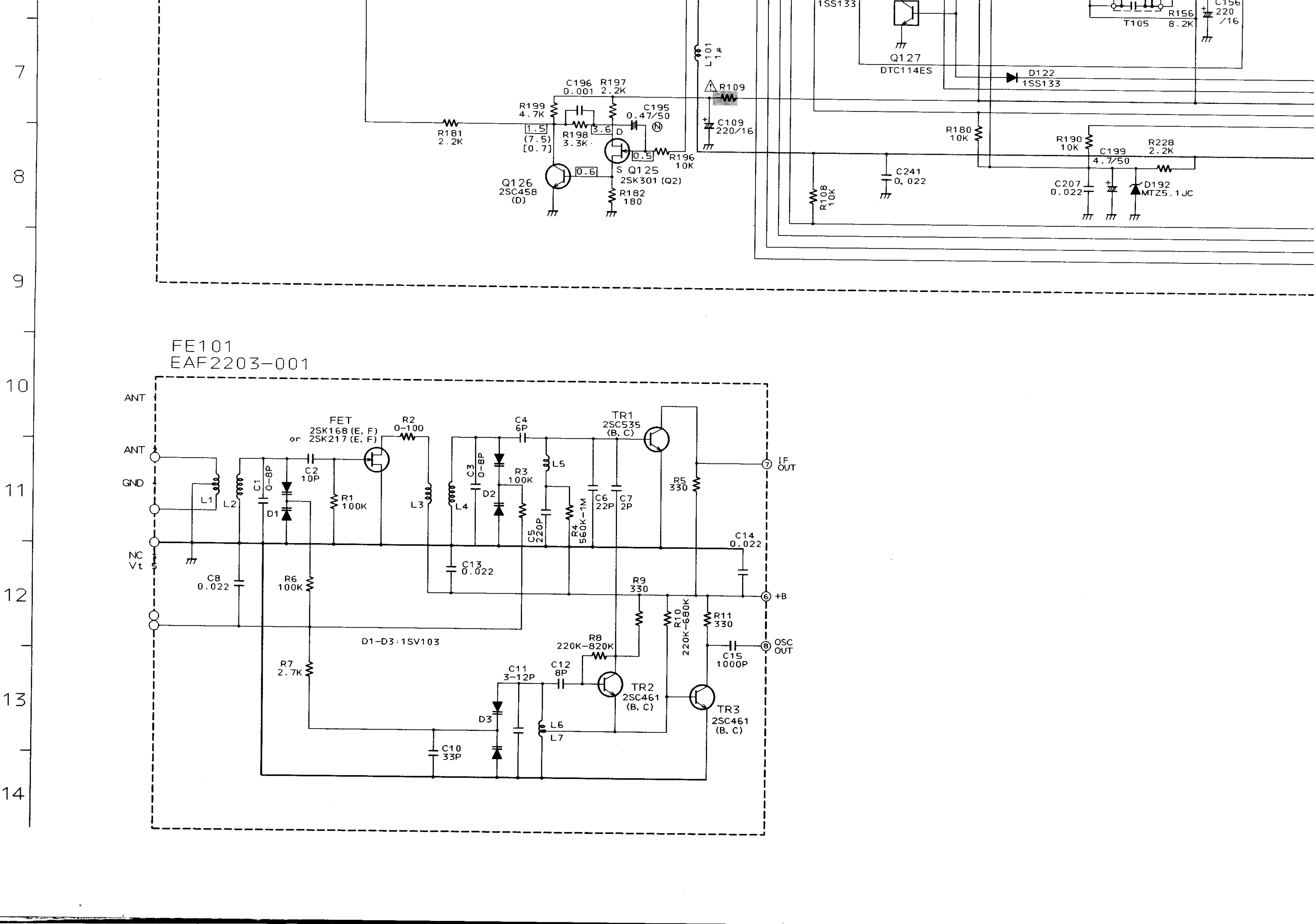

A
B
C
D
E
F
G
H
I
J
K
L
1
2
3
4
5
6
7
8
FOR U, A
ENA-141-1
FM RF
FE101
ANT
ANT
NC
GND
VT
+B
IFOUT
OSCOUT
FM IF AMP
C101 0.022
R123 1K
C126 0.022
R122 2.7K
Q103 2SC461 (B.C)
Q108 2SC461 (B.C)
Q107 2SC535 (B.C)
R119 220
R118 3.3K
CF101
R121 390
R124 680
C122 0.022
R125 3.3K
R126 220
C110 1.5
C198 0.01
AT101
FM 75Ω
GND
AM
AM RF
TP101
V. TUNE
C197 0.022
T101
TC105
VC105 SVC342 (L)
R133 47K
C136 18P (CH)
C137 220P (CH)
T103
C138 240P (CH)
R132 10K
C135 0.022 (QCC)
R135 47
C133 0.022
C134 10/25
R131 330
Q112 2SK301 (Q, R)
C132 560P
R136 10K
C192 0.047 (QCC)
IC102 LC7218
XOUT
VSS
PD2
PD1
VDD
FM OSC
AM OSC
IF REQ
FM IF
AM IF
LW
MW
Xin
CE
DI
CK
DO
SYC
TUNED STOP IN
POWER
QSC
MONO
FM
R195 47K
XT102
C193 18P
C194 18P
Q123 DTA144ES
Q124 DTA144ES
PLL
R191 5.6K
D121 1SS133
D120 1SS133
Q127 DTC114ES
D122 1SS133
L101 1μ
R109
C109 220/16
C196 0.001
R197 2.2K
R199 4.7K
C195 0.47/50
R181 2.2K
R198 3.3K
Q125 2SK301 (Q2)
R196 10K
Q126 2SC458
R182
C241 0.022
R180 10K
R194 10K
C171 10/25
C170 0.022
T107
C150
R150
C166
R149
C165
C168 4.7/50
R151 2.2K
C149 0.022
C155 0.022
R148 10K
R146 56
L106 1m
C172 0.01
C169 0.022
IC104 LA1266A
AMOSC OUT
AM OSC
V. REF
AM IN
AM MIX
AM AGC
AM IF
FM ADJ
FM OUT
AM NAR S.M
STRQ
FM IF
BY PASS
BY PASS
GND
FM DET
FM DET
VCC
SIG
FM AFC
FM IF
AM IF
FM OUT
CF102
C152
C151 0.022
C157 0.47/50
C159 100P
C158 100P
R158
C153 0.022 (QCC)
T105
R156 8.2K
R157 10K
C156 220/16
R190 10K
C199 4.7/50
R228 2.2K
C207 0.022
D192 MTZ5.1JC
R159
11.6
11.2
2.8
1.5
11.6
10.5
10.5
9.8
1.4
0.7
(3.6)
[0] (4.3)
[0] (10.1)
(0) [0]
2.7
0.5
2.8
0.1
(0.1) [11.7]
11.7
(11.7) [0]
10.2
(0) [0]
11.7
5.0
1.5
(7.5) [0.7]
3.6
0.5
0.6
4.0
3.0
2.3
(1.0)

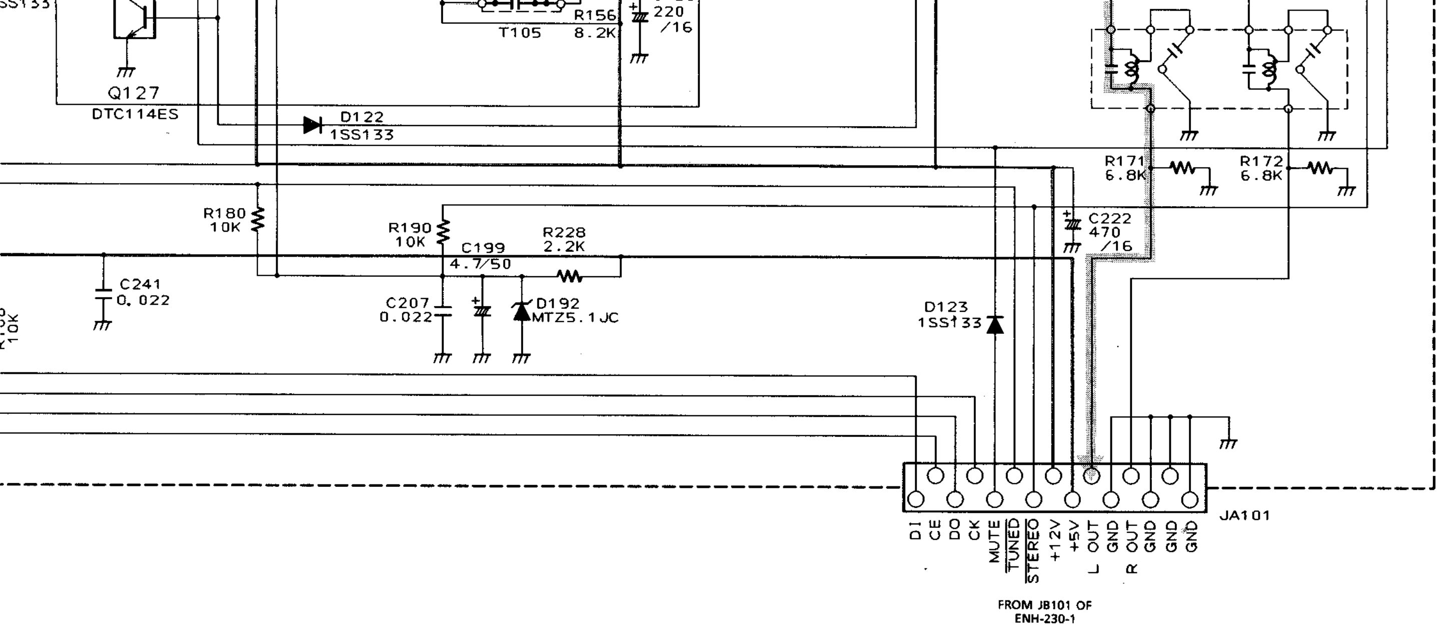

H
I
J
K
L
M
N
O
P
Q
R
S
T
FM/AM IF DET
MPX
T107
C171 10/25
C170 0.022
C149 0.022
R151 2.2K
C155 0.022
C150 0.022
R150 10K
C166 2.2/50
R149 27K
C165 0.47/50
C168 4.7/50
C167 2.2/50
R148 10K
R147 10K
R160 *
R146 56
C164 0.022
C162 10/25
D106 1SS133
C163 0.001
R154 10K
C185 2.2/50
C184 1/50
C186 0.47/50
R155 5.6K
C183 1/50
R153 10K
XT103
L106 1m
C172 0.01
C169 0.022
R194 10K
IC104 LA1266A
AMOSC OUT
AM OSC
V.REF
AM IN
AM MIX
AM AGC
AM IF
AM ADJ
FM ADJ
AM OUT
S.M NAR
STRQ
FM IF
BY PASS
BY PASS
GND
AM DET
FM DET
VCC
SIG
AFC
FM IF
AM IF
FM OUT
CENTER METER
TP102
R159 560
R158 *
C161 0.022
IC105 LA3401
VCC
VCO
L.P.F.
PILOT IN
L.P.F.
MUTE IN
MUTE CONT
STEREO
GND
AM IN
FM IN
PILOT OUT
SEPA ADJ
L-OUT
L
R
R-OUT
MUTE CONT
AM /FM
MUTE OUT
C174 0.047 MY
C173 *
C176 0.001
C181 10/25
R167 *
C182 2.2/50
R168 10K
R169 10K
C175 10/25
*R161
C177 *
R162 *
C178 *
R165 *
R163 *
R166 *
R164 *
C179 2.2/50
C180 2.2/50
R171 6.8K
R172 6.8K
C222 470 /16
D123 1SS133
Q123 DTA144ES
Q124 DTA144ES
Q127 DTC114ES
PLL
FM OSC
AM OSC
IF REQ
FM IF
AM IF
LW
MW
SYC
TUNED
STOP IN
POWER
QSC
MONO
FM
R191 5.6K
D121 1SS133
D120 1SS133
D122 1SS133
CF102
C152 0.022
C157 0.47 /50
C159 100P
C160 220P
C151 0.022
C158 100P
C154 0.022
C191 4.7/50
R157 10K
C156 220 /16
R156 8.2K
T105
C153 0.022 (QCC)
R180 10K
R190 10K
C199 4.7/50
R228 2.2K
C207 0.022
D192 MTZ5.1JC
C241 0.022
R108 10K

* MARK

	U	A
R109	68 UNF.F. (1/4W)	68 UNF.F. (1/4W)
R167	39K	47K
R160	5.6K	10K
R161, 162	82K	100K
R163, 164	4.7K	3.3K
R165, 166	180K	270K
C177, 178	820P	560P
R158	27K	27K
C173	0.039	0.022

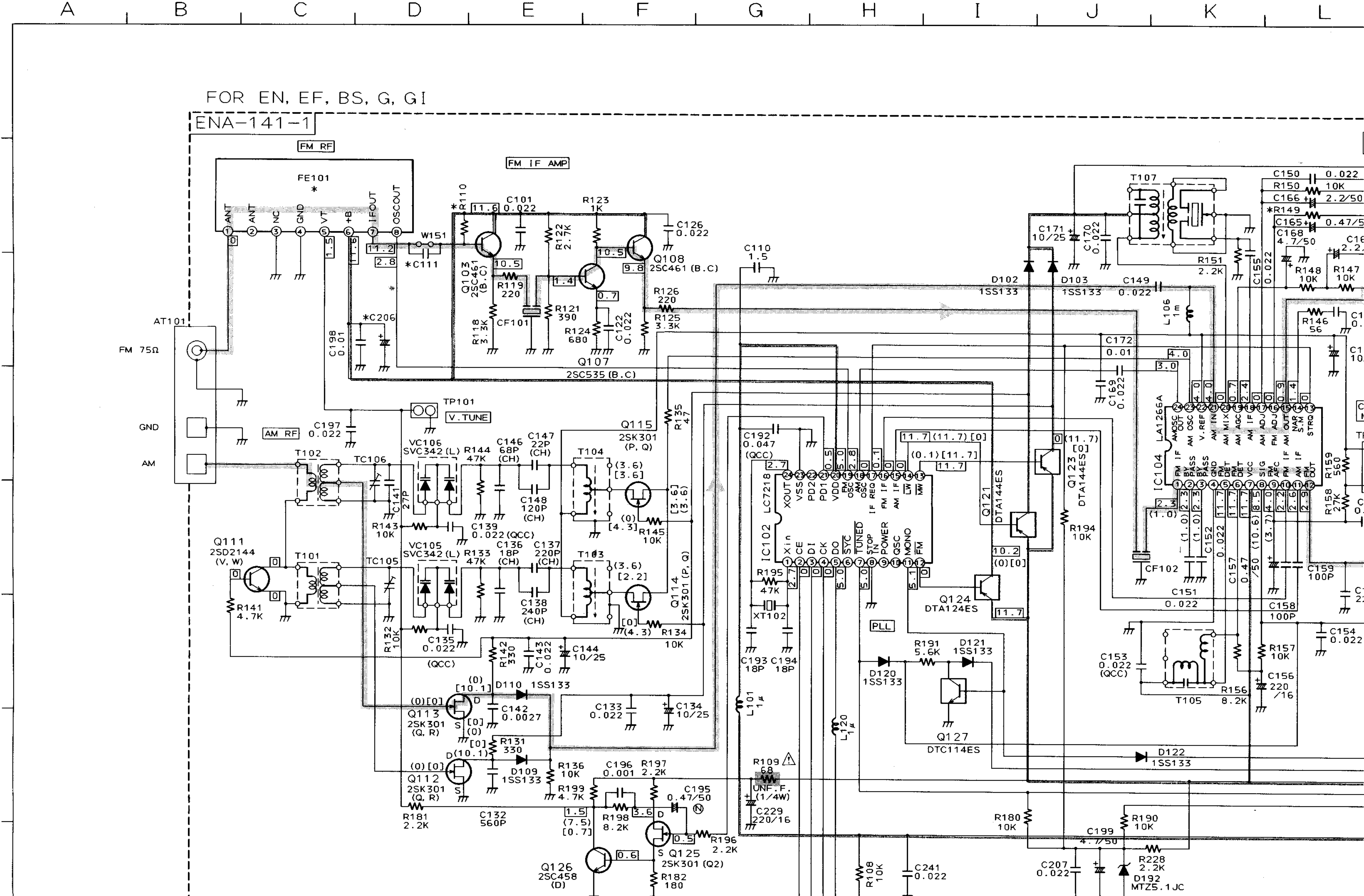
☐FM AUTO NO SIGNAL
( )MW NO SIGNAL
[ ]LW NO SIGNAL

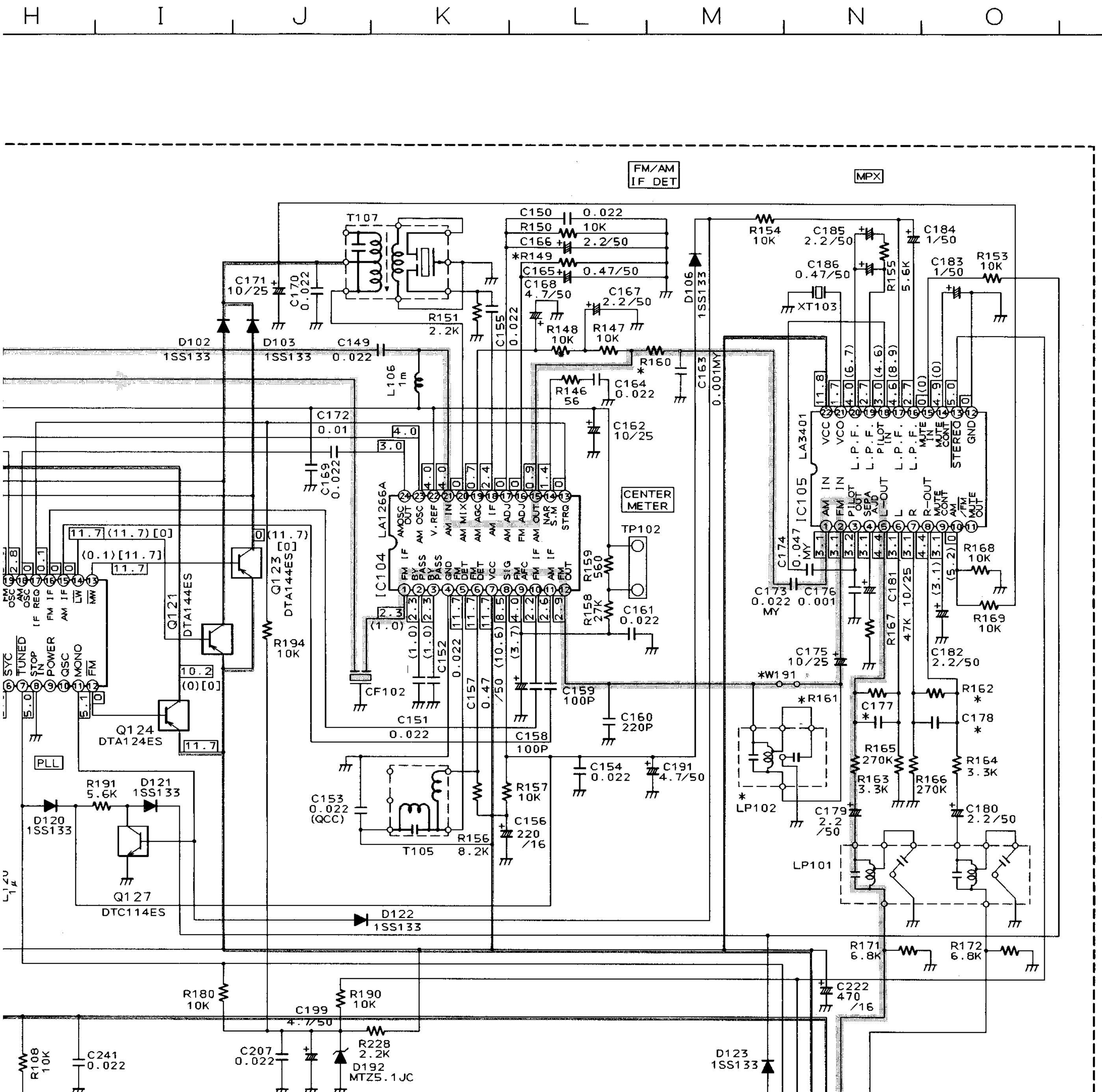

7
8
9
10
11
12
13
14
1SS133
Q127
DTC114ES
D122
1SS133
T105
R156
8.2K
C156
220
/16
L101
1μ
R109
C109
220/16
C196
0.001
R197
2.2K
C195
0.47/50
Ⓝ
R199
4.7K
R181
2.2K
1.5
(7.5)
[0.7]
R198
3.3K
3.6
D
0.5
R196
10K
S
Q125
2SK301 (Q2)
0.6
Q126
2SC458
(D)
R182
180
R180
10K
R108
10K
C241
0.022
R190
10K
C199
4.7/50
R228
2.2K
C207
0.022
D192
MTZ5.1JC
FE101
EAF2203-001
ANT
ANT
GND
NC
Vt
L1
L2
C1
0-8P
D1
C2
10P
FET
2SK168 (E, F)
or 2SK217 (E, F)
R1
100K
R2
0-100
L3
L4
C3
0-8P
D2
C4
6P
R3
100K
L5
C5
220P
R4
560K-1M
C6
22P
C7
2P
TR1
2SC535
(B, C)
R5
330
⑦ IF OUT
C14
0.022
C13
0.022
C8
0.022
R6
100K
R9
330
⑥ +B
R10
220K-680K
R11
330
C15
1000P
⑧ OSC OUT
D1-D3:1SV103
R8
220K-820K
R7
2.7K
C11
3-12P
C12
8P
TR2
2SC461
(B, C)
TR3
2SC461
(B, C)
D3
L6
L7
C10
33P



1SS133
Q127
DTC114ES
T105
R156
8.2K
220
/16
D122
1SS133
R171
6.8K
R172
6.8K
R180
10K
R190
10K
C199
4.7/50
R228
2.2K
C222
470
/16
C241
0.022
C207
0.022
D192
MTZ5.1JC
D123
1SS133
10K
JA101
DI
CE
DO
CK
MUTE
TUNED
STEREO
+12V
+5V
L OUT
GND
R OUT
GND
GND
GND
FROM JB101 OF
ENH-230-1

(4) Tuner Section (with LW)


A
B
C
D
E
F
G
H
I
J
K
L
1
2
3
4
5
6
7
8
FOR EN, EF, BS, G, GI
ENA-141-1
FM RF
FE101
ANT
ANT
NC
GND
VT
+B
IFOUT
OSCOUT
FM IF AMP
AT101
FM 75Ω
GND
AM
AM RF
W151
*C111
*C206
C198 0.01
C197 0.022
TP101
V.TUNE
*R110
C101 0.022
R123 1K
R122 2.7K
C126 0.022
Q103 2SC461 (B.C)
Q108 2SC461 (B.C)
Q107 2SC535 (B.C)
R119 220
R118 3.3K
CF101
R121 390
R124 680
C122 0.022
R126 220
R125 3.3K
C110 1.5
D102 1SS133
D103 1SS133
C149 0.022
L106 1m
C171 10/25
C170 0.022
T107
C150 0.022
R150 10K
C166 2.2/50
*R149
C165 0.47/5
C168 4.7/50
R151 2.2K
C155 0.022
R148 10K
R147 10K
R146 56
C172 0.01
C169 0.022
IC104 LA1266A
AMOSC OUT
AM OSC
V.REF
AM MIX
AM AGC
AM IF
AM IF ADJ
AM OUT
FM AM S.M
STRQ
FM IF
FM BYPASS
AM BYPASS
GND
FM DET
FM DET
VCC
SIG
AFC
FM IF ADJ
AM IF
FM OUT
R159 560
R158 27K
CF102
C151 0.022
C152 0.022
C157 0.47/50
C159 100P
C158 100P
C154 0.022
C153 0.022 (QCC)
T105
R156 8.2K
R157 10K
C156 220/16
T102
TC106
C141 27P
VC106 SVC342 (L)
R144 47K
C146 68P (CH)
C147 22P (CH)
C148 120P (CH)
C139 0.022 (QCC)
R143 10K
T104
Q115 2SK301 (P, Q)
R135 47
R145 10K
Q111 2SD2144 (V, W)
T101
TC105
R141 4.7K
VC105 SVC342 (L)
R133 47K
C136 18P (CH)
C137 220P (CH)
C138 240P (CH)
T103
Q114 2SK301 (P, Q)
R134 10K
R132 10K
C135 0.022
(QCC)
R142 330
C143 0.022
C144 10/25
D110 1SS133
Q113 2SK301 (Q, R)
C142 0.0027
C133 0.022
C134 10/25
R131 330
D109 1SS133
Q112 2SK301 (Q, R)
R136 10K
R199 4.7K
R181 2.2K
C132 560P
C196 0.001
R197 2.2K
C195 0.47/50
R198 8.2K
Q125 2SK301 (Q2)
R196 2.2K
Q126 2SC458 (D)
R182 180
C192 0.047 (QCC)
IC102 LC7218
XOUT
VSS
PD2
PD1
VDD
FM OSC
AM OSC
IF REQ
FM IF
AM IF
LW
MW
Xin
CE
DI
CK
DO
SYC
TUNED
STOP IN
POWER
QSC
MONO
FM
R195 47K
XT102
C193 18P
C194 18P
L101 1μ
L120 1μ
R109 68
UNF.F. (1/4W)
C229 220/16
Q121 DTA144ES
Q123 DTA144ES
R194 10K
Q124 DTA124ES
PLL
D120 1SS133
R191 5.6K
D121 1SS133
Q127 DTC114ES
D122 1SS133
R180 10K
R190 10K
C199 4.7/50
R228 2.2K
C207 0.022
D192 MTZ5.1JC
R108 10K
C241 0.022


H
I
J
K
L
M
N
O
P
Q
R
S
T
FM/AM IF DET
MPX
T107
C171 10/25
C170 0.022
C150 0.022
R150 10K
C166 2.2/50
*R149
C165 0.47/50
C168 4.7/50
C167 2.2/50
R148 10K
R147 10K
R151 2.2K
C155 0.022
D106 1SS133
R154 10K
C185 2.2/50
C184 1/50
C186 0.47/50
XT103
R155 5.6K
C183 1/50
R153 10K
D102 1SS133
D103 1SS133
C149 0.022
L106 1m
R160 *
R146 56
C164 0.022
C162 10/25
C163 0.001MY
C172 0.01
C169 0.022
CENTER METER
TP102
IC104 LA1266A
IC105 LA3401
R159 560
R158 27K
C161 0.022
C174 0.047 MY
C173 0.022 MY
C176 0.001
C181 10/25
R167 47K
R168 10K
R169 10K
C182 2.2/50
C175 10/25
*W191
*R161
R162 *
C177 *
C178 *
R165 270K
R163 3.3K
R166 270K
R164 3.3K
C179 2.2 /50
C180 2.2/50
*LP102
LP101
Q121 DTA144ES
Q123 DTA144ES
R194 10K
Q124 DTA124ES
PLL
CF102
C151 0.022
C152 0.022
C157 0.47 /50
C159 100P
C160 220P
C158 100P
C154 0.022
C191 4.7/50
C153 0.022 (QCC)
T105
R156 8.2K
R157 10K
C156 220 /16
R191 5.6K
D121 1SS133
D120 1SS133
Q127 DTC114ES
D122 1SS133
R171 6.8K
R172 6.8K
C222 470 /16
R180 10K
R190 10K
C199 4.7/50
R228 2.2K
D192 MTZ5.1JC
C207 0.022
D123 1SS133
R108 10K
C241 0.022
L120 1μ

∗ MARK

	EN, EF	G, GI	BS
R160	10K	10K	1K
R161, 162	100K	100K	68K
C177, 178	560P	560P	820P
FE101	EAF2203-001	EAF2203-003	EAF2203-001
LP102	NONE	USED	NONE
W191	USED	NONE	USED
R149	22K	27K	22K
R110	NONE	NONE	NONE
C111	NONE	NONE	NONE
W151	USED	USED	USED
C107	NONE	47/50	NONE

☐ FM AUTO NO SIGNAL
( ) MW NO SIGNAL
[ ] LW NO SIGNAL

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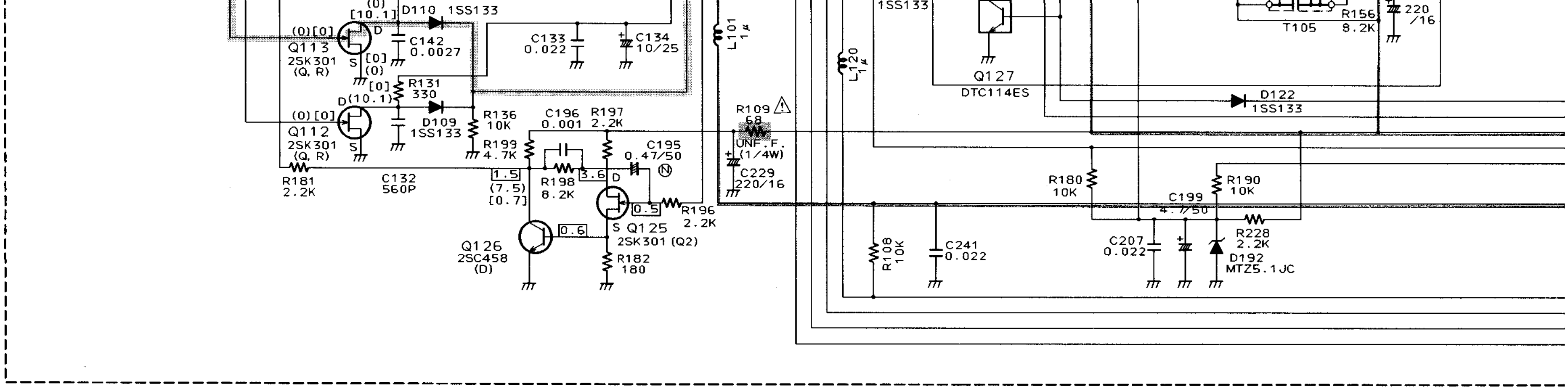
12

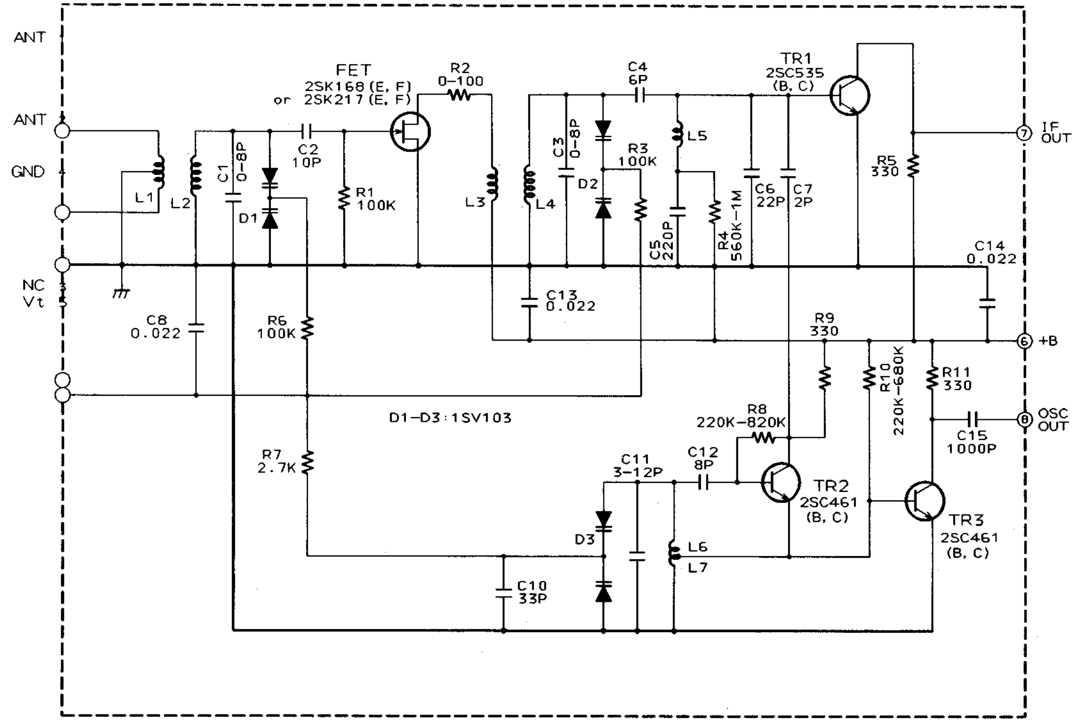
13

14



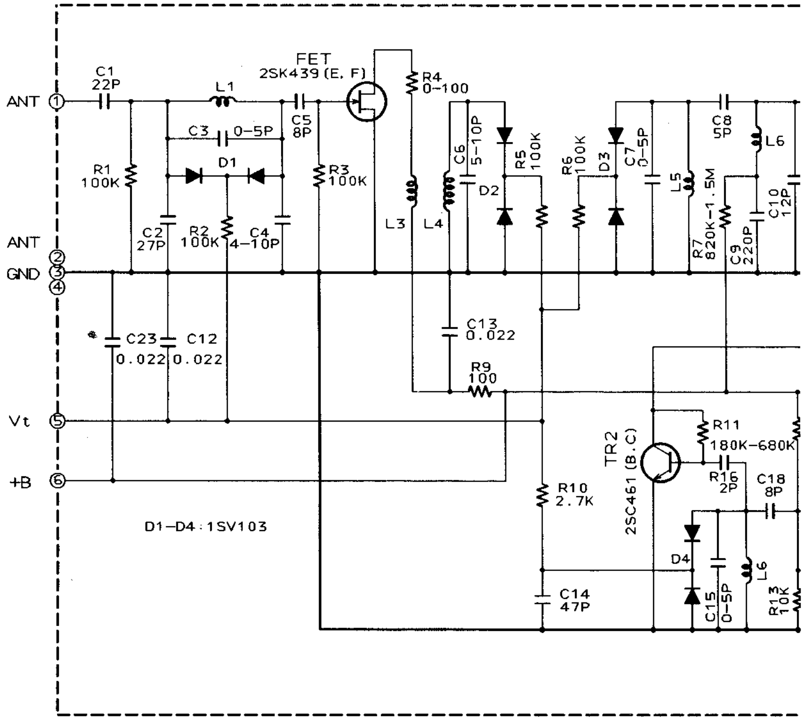
D110 1SS133
Q113 2SK301 (Q, R)
C142 0.0027
C133 0.022
C134 10/25
L101 1μ
L120 1μ
1SS133
Q127 DTC114ES
T105
R156 8.2K
220 /16
D122 1SS133
R131 330
Q112 2SK301 (Q, R)
D109 1SS133
R136 10K
C196 0.001
R197 2.2K
R109 68 UNF.F. (1/4W)
C229 220/16
R199 4.7K
C195 0.47/50
R198 8.2K
R181 2.2K
C132 560P
1.5 (7.5) [0.7]
3.6
0.5
R196 2.2K
Q125 2SK301 (Q2)
0.6
Q126 2SC458 (D)
R182 180
R180 10K
R190 10K
C199 4.7/50
R228 2.2K
R108 10K
C241 0.022
C207 0.022
D192 MTZ5.1JC

FE101
EAF2203-001 (FOR EN, EF, BS)

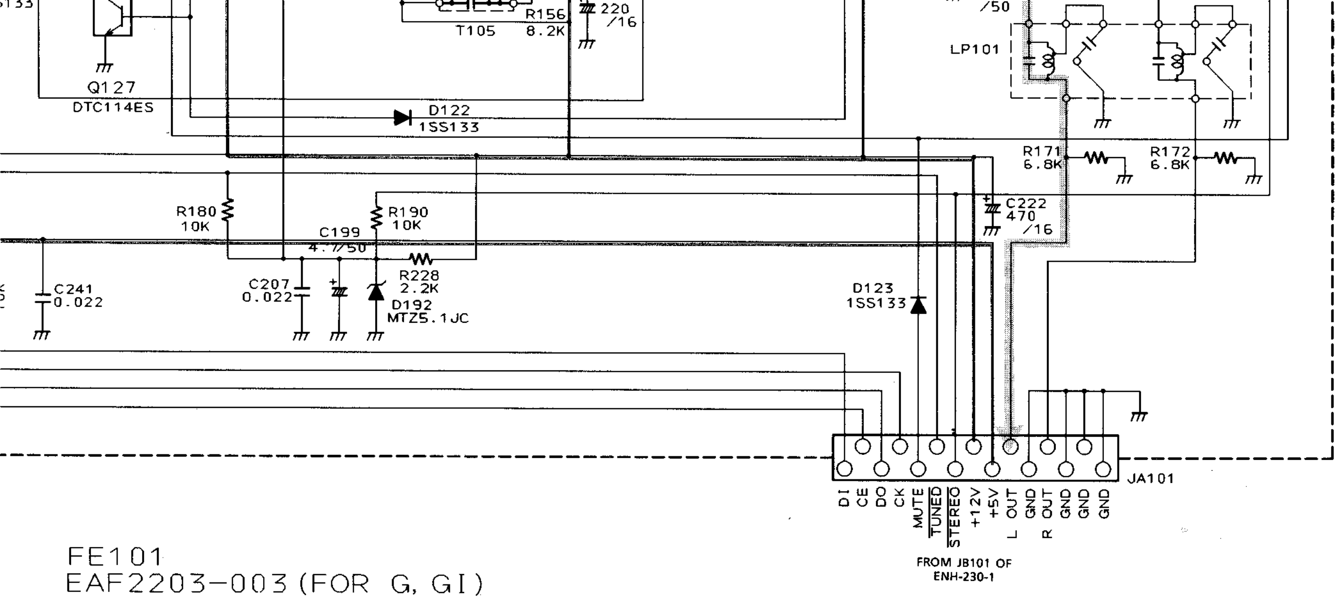


ANT
ANT
GND
NC
Vt
FET 2SK168 (E, F) or 2SK217 (E, F)
R2 0–100
C4 6P
TR1 2SC535 (B, C)
L1
L2
C1 0–8P
D1
C2 10P
R1 100K
L3
L4
C3 0–8P
D2
R3 100K
L5
C5 220P
R4 560K–1M
C6 22P
C7 2P
R5 330
⑦ IF OUT
C14 0.022
C8 0.022
R6 100K
C13 0.022
R9 330
⑥ +B
R10 220K–680K
R11 330
C15 1000P
⑧ OSC OUT
D1–D3:1SV103
R8 220K–820K
R7 2.7K
C11 3–12P
C12 8P
TR2 2SC461 (B, C)
TR3 2SC461 (B, C)
D3
L6
L7
C10 33P

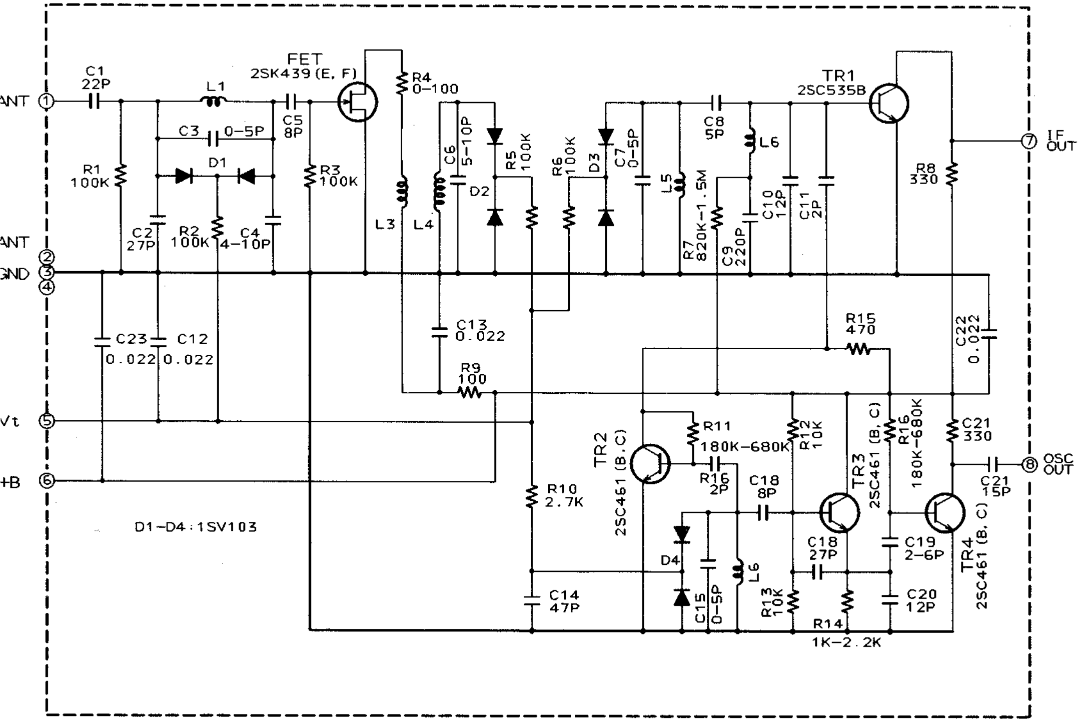
FE101
EAF2203-003 (FOR G, GI)



ANT ①
C1 22P
L1
FET 2SK439 (E, F)
C5 8P
R4 0–100
C3 0–5P
D1
R1 100K
C2 27P
R2 100K
C4 4–10P
R3 100K
L3
L4
C6 5–10P
D2
R5 100K
R6 100K
D3
C7 0–5P
L5
C8 5P
L6
R7 820K–1.5M
C9 220P
C10 12P
ANT ②
GND ③
④
C23 0.022
C12 0.022
C13 0.022
R9 100
Vt ⑤
+B ⑥
TR2 2SC461 (B, C)
R11 180K–680K
R16 2P
C18 8P
R10 2.7K
D4
C15 0–5P
L6
C14 47P
R13 10K
D1–D4:1SV103


Q127
DTC114ES
T105
R156
8.2K
220
/16
/50
LP101
D122
1SS133
R171
6.8K
R172
6.8K
C222
470
/16
R180
10K
R190
10K
C199
4.7/50
R228
2.2K
C207
0.022
D192
MTZ5.1JC
C241
0.022
D123
1SS133
JA101
DI
CE
DO
CK
MUTE
TUNED
STEREO
+12V
+5V
L OUT
GND
R OUT
GND
GND
GND
FROM JB101 OF
ENH-230-1

FE101
EAF2203-003 (FOR G, GI)


ANT ①
ANT ②
GND ③
④
Vt ⑤
+B ⑥
⑦ IF OUT
⑧ OSC OUT
C1
22P
L1
FET
2SK439 (E, F)
C5
8P
R4
0-100
C3
0-5P
D1
R1
100K
C2
27P
R2
100K
C4
4-10P
R3
100K
L3
L4
C6
5-10P
D2
R5
100K
R6
100K
D3
C7
0-5P
L5
C8
5P
L6
R7
820K-1.5M
C9
220P
C10
12P
C11
2P
TR1
2SC535B
R8
330
C23
0.022
C12
0.022
C13
0.022
R9
100
R15
470
C22
0.022
TR2
2SC461 (B, C)
R11
180K-680K
R12
10K
TR3
2SC461 (B, C)
R16
180K-680K
C21
330
C21
15P
R16
2P
C18
8P
R10
2.7K
D4
C15
0-5P
L6
C18
27P
R13
10K
R14
1K-2.2K
C19
2-6P
C20
12P
TR4
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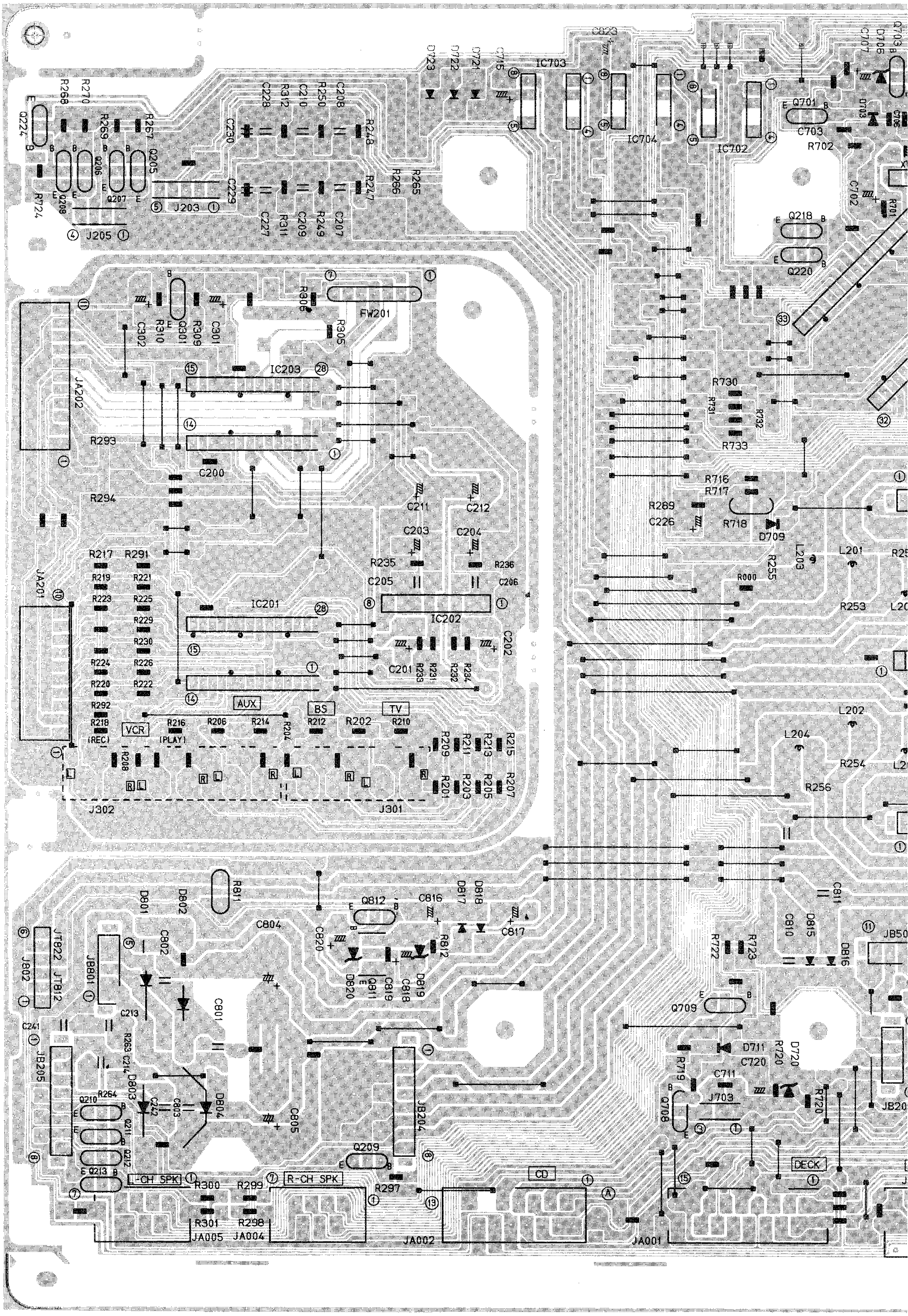
C14
47P
D1-D4:1SV103

Printed Circuit Boards

(1) Main & Volume P.C. Board (ENH-230)



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J802
JB801
JB205
JB204
JA005
JA004
JA002
JA001
J703
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Q206
Q207
Q205
Q301
Q701
Q218
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Q213
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R257
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R247
R265
R266
C228
R312
C210
R250
C208
C230
C229
C227
R311
C209
R249
C207
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D722
D721
C715
C823
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D706
Q703
D703
C703
R702
C702
R701
R306
R305
C302
R310
R309
C301
R293
C200
R294
C211
C212
C203
C204
R235
R236
C205
C206
C201
R231
R232
R234
R233
C202
R217
R291
R219
R221
R223
R225
R229
R230
R224
R226
R220
R222
R292
R218
(REC)
VCR
R216
(PLAY)
R206
R214
R204
AUX
R212
BS
R202
TV
R210
R209
R211
R213
R215
R208
R201
R203
R205
R207
R730
R731
R732
R733
R716
R717
R289
C226
R718
D709
L203
R255
R000
L201
R253
L202
L204
R254
R256
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D801
D802
C804
C820
C816
D817
D818
C817
R812
D820
C819
C818
D819
C802
C801
C213
C241
R263
C214
D803
C242
C803
D804
C805
R264
L-CH SPK
R300
R299
R-CH SPK
R297
R301
R298
CD
C811
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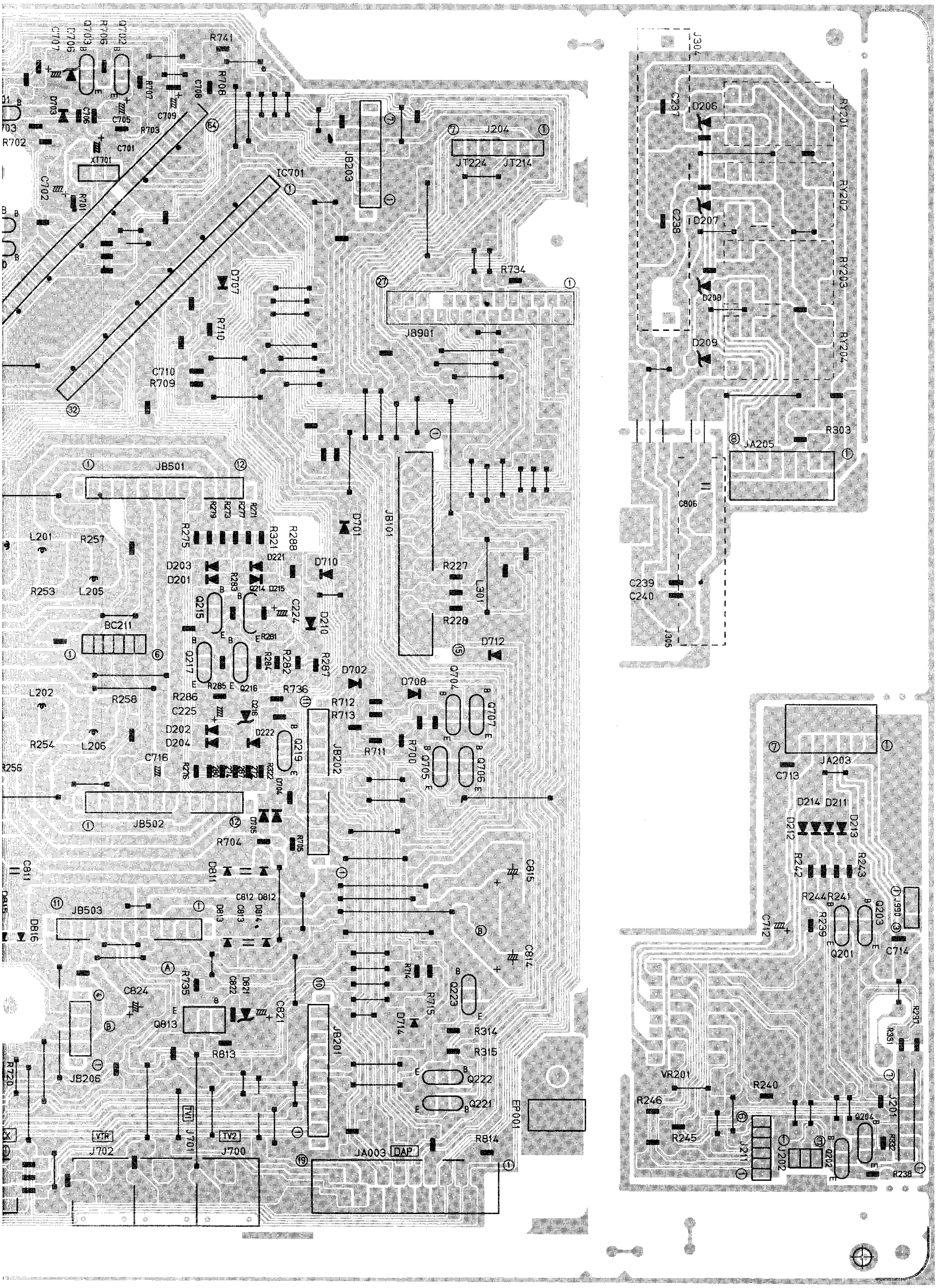
JB20
DECK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R734
JB901
D707
R710
C710
R709
J304
C237
D206
RY201
RY202
C238
D207
RY203
D208
D209
RY204
R303
JA205
C806
C239
C240
J305
JB501
R275
R321
R288
D221
D203
D201
R283
Q214
D215
C224
Q215
R281
D710
D210
D701
JB101
R227
L301
R228
D712
L201
R257
L205
R253
BC211
Q217
R284
R282
R287
R285
Q216
D702
D708
Q704
Q707
R286
C225
D216
R736
R712
R713
L202
R258
D202
D204
D222
Q219
JB202
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Q706
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C716
R256
R276
R222
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D705
JB502
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R705
C811
D811
C815
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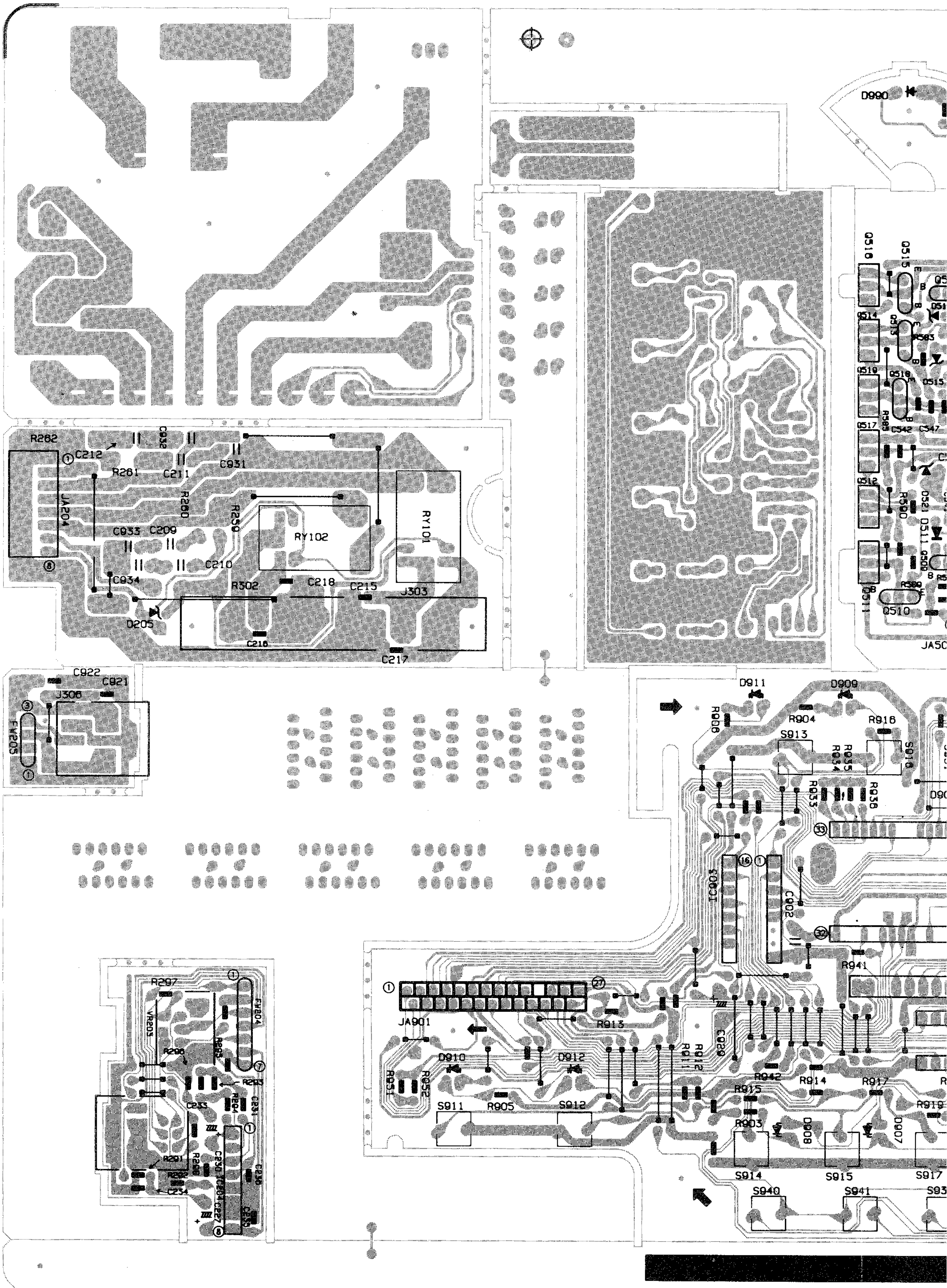
D812
D813
C813
D814
JB503
D816
C814
R714
Q223
R715
D714
C824
R735
C822
D821
C821
Q813
R813
JB201
R314
R315
Q222
Q221
EP001
JB206
R720
TV1
J701
TV2
VTR
J702
J700
JA003
DAP
R814
JA203
C713
D214
D211
D212
D213
R242
R243
R244
R241
R239
Q203
J950
C712
Q201
C714
R237
R331
VR201
R240
R246
R245
J211
J202
Q202
Q204
R332
J201
R238

(2) Front, Speaker & Amplifier P.C. Board (ENB-173)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D511
Q508
Q511
R580
Q510
JA50
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C212
C932
C931
R261
C211
R260
R259
JA204
RY102
RY101
C933
C209
C210
C934
R302
C218
C215
J303
D205
C216
C217
C922
C921
J306
FW203
D911
D909
R908
R904
R916
S913
R935
R934
S916
R933
R936
D90
IC903
IC902
R941
JA901
R913
C920
R911
R912
D910
D912
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R952
R942
R914
R917
R915
R919
S911
R905
S912
R903
D908
D907
S914
S915
S917
S940
S941
S93
R297
FW804
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R295
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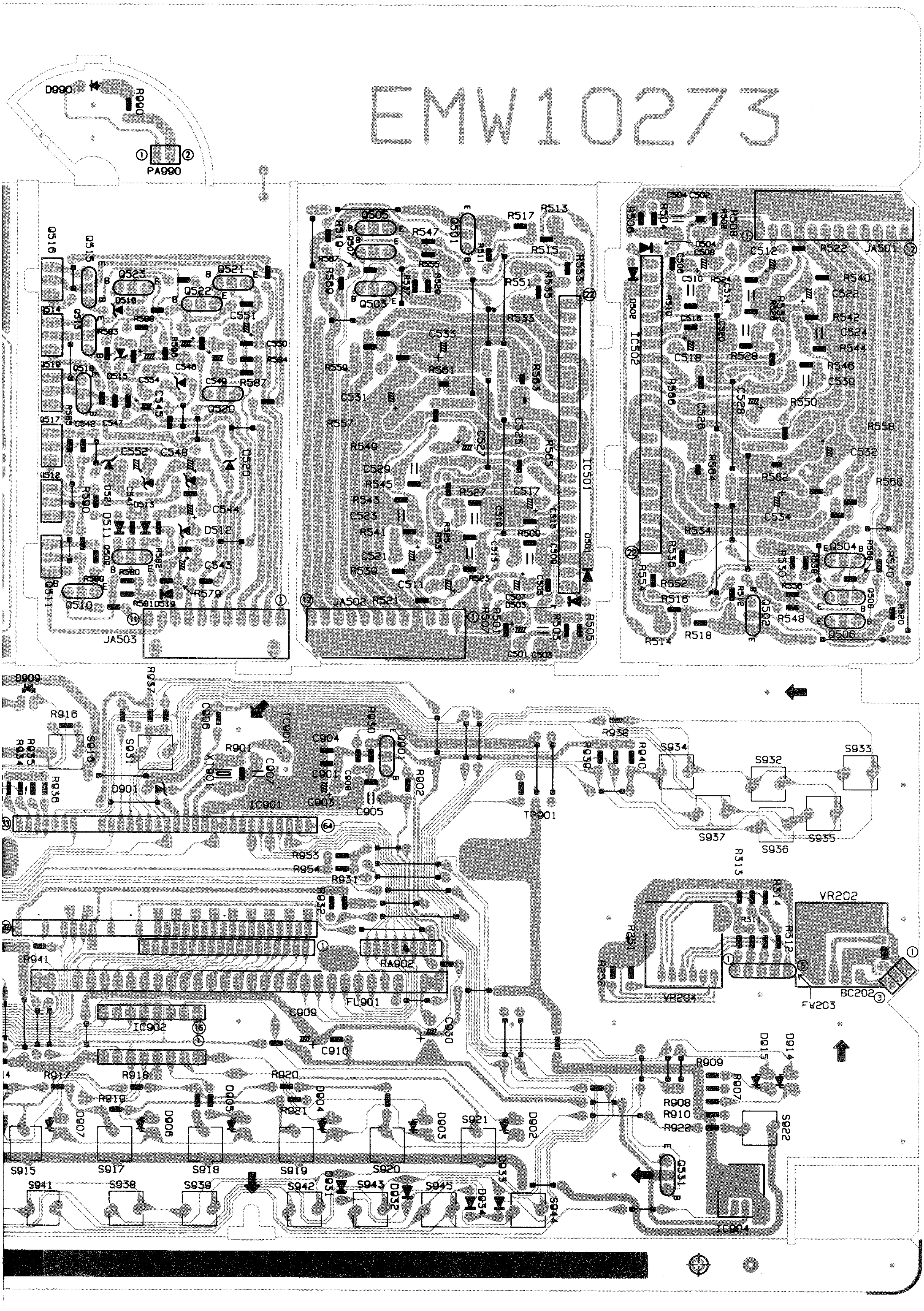
C231
R291
R296
R292
C234
C230
IC204
C232
C235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R586
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C550
R584
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Q519
D515
C554
C545
C549
R587
Q520
R585
C542
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Q517
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C548
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D521
C541
D513
C544
D511
D512
Q506
R582
C543
Q511
R589
R580
R579
Q510
R581
D519
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⑪
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Q504
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R511
R517
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R515
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R520
Q503
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R553
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D909
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C907
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R902
R936
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C905
IC901
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S932
S933
TP901
S937
S936
S935
R953
R954
R931
R932
R313
R314
VR202
R311
R331
R312
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VR204
FW203
BC202
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C910
D915
D914
R909
R917
R918
R920
R907
R919
D905
D904
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R922
S922
D907
D906
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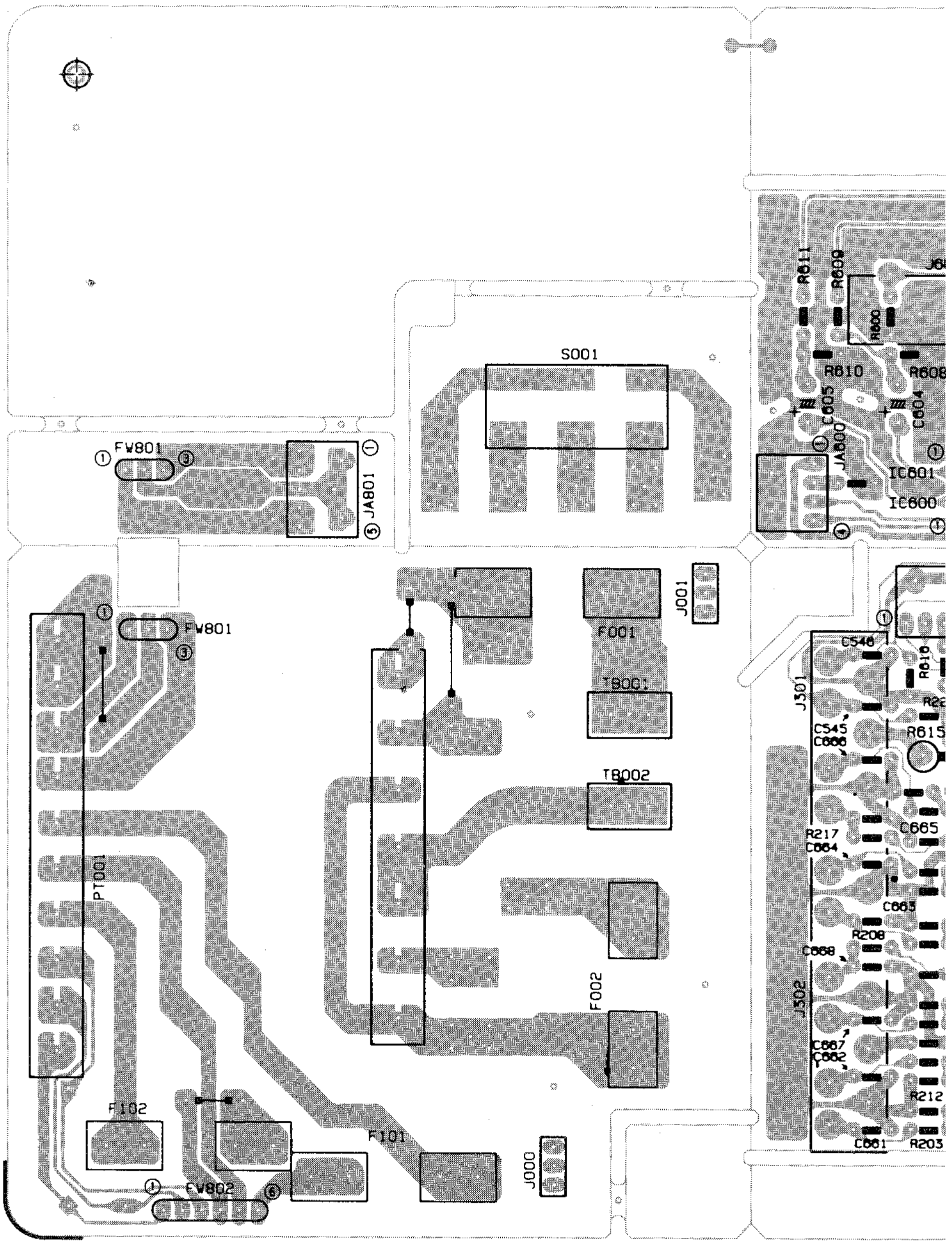
Q931
S941
S938
S939
S942
D931
S943
D932
S945
D934
S944
IC904
⑯
⑤
③
(64)

(3) Source Selector & Power Supply P.C. Board (ENE-090)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R600
R610
R608
C605
C604
JA600
IC601
IC600
J301
C546
R610
R615
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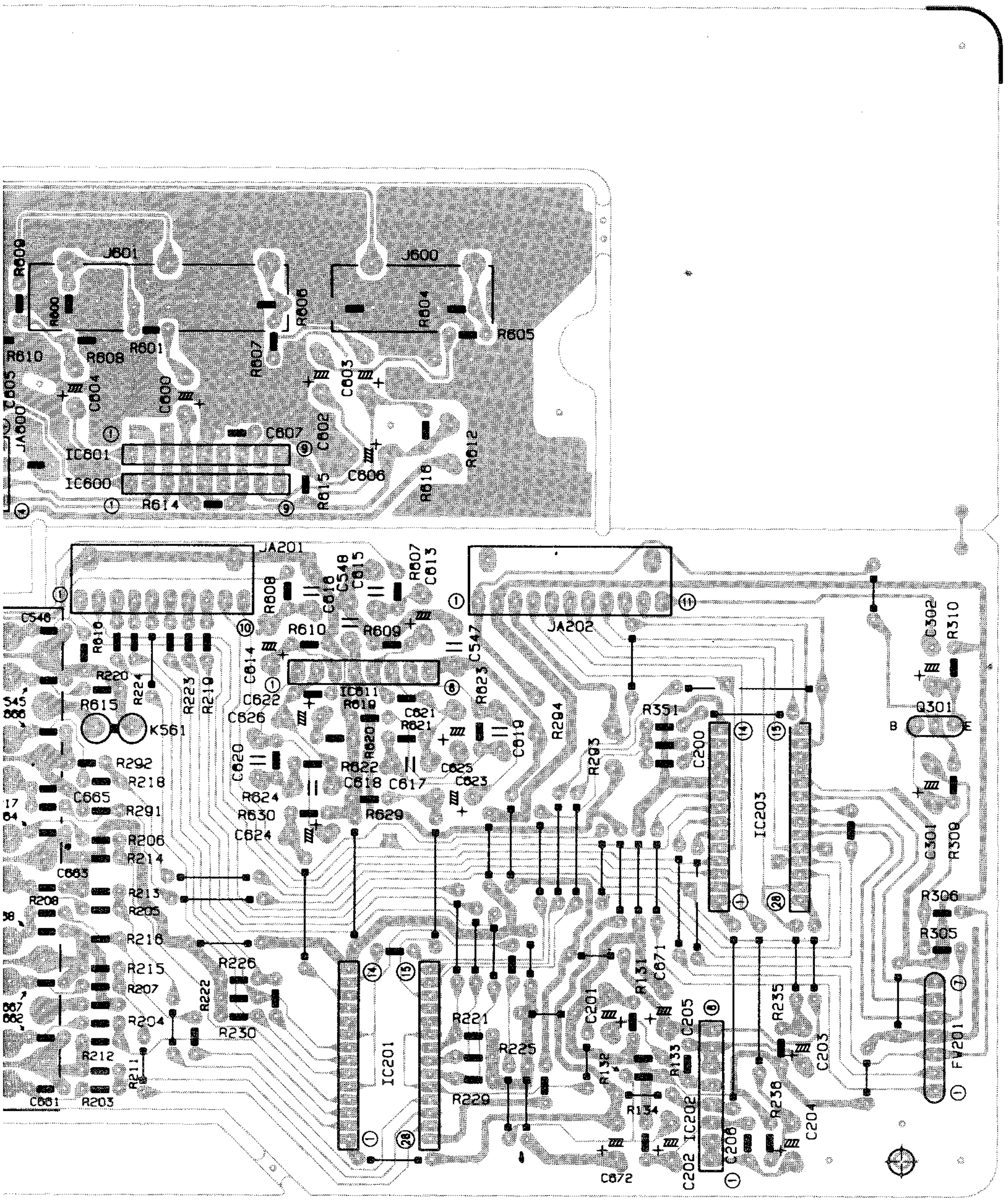
C661
R203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R223
R210
C548
C615
C616
R607
C613
R608
R610
R609
C547
C614
C622
C626
IC611
R619
R623
R615
K561
C621
R621
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C619
R294
R293
R351
C200
IC203
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R622
C618
C617
C625
C623
R624
R630
R629
C624
R292
R218
C665
R291
R206
R214
C663
R208
R213
R205
R216
R215
R207
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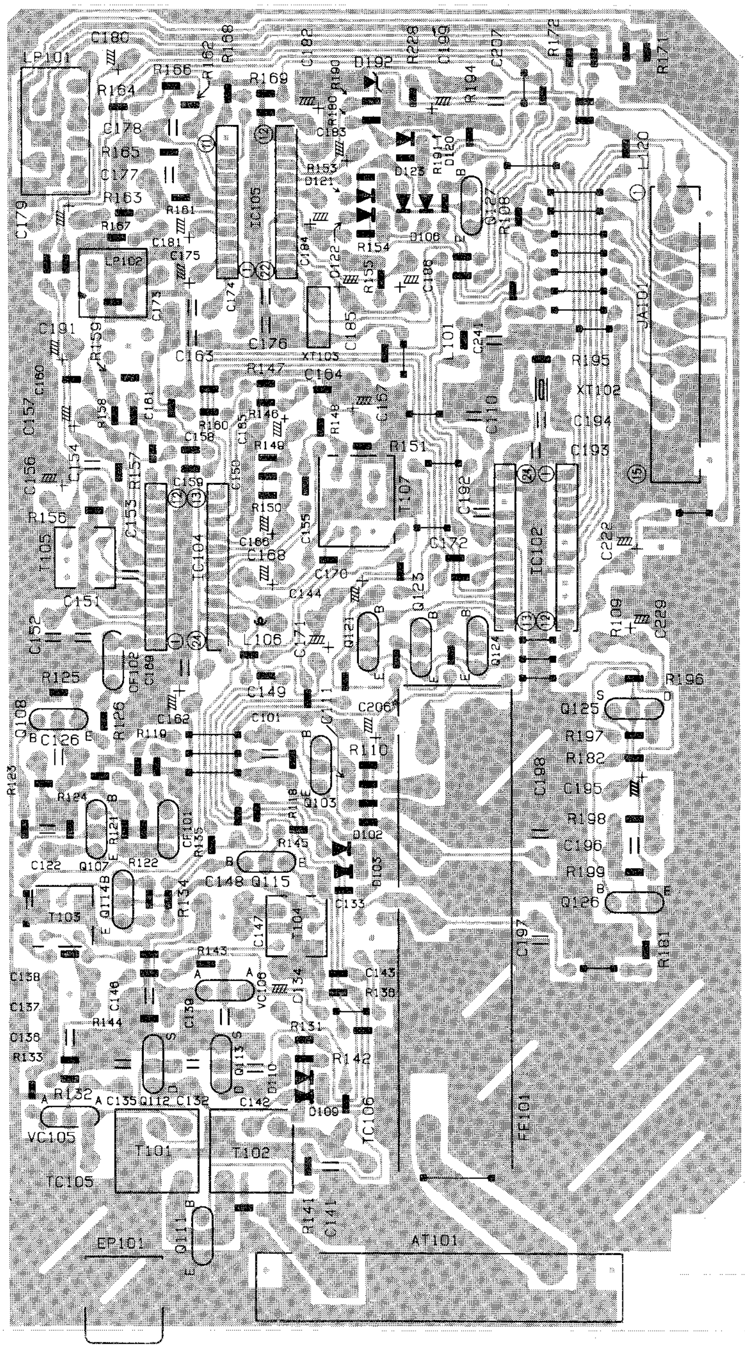
IC201
R221
R225
R229
R131
C671
C201
R132
R133
C205
R134
IC202
C206
C202
C672
R235
R236
C203
C204
C302
R310
Q301
B
E
C301
R309
R306
R305
FV201

(4) Tuner CB (ENA-141)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R168
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R169
D192
R228
C190
C207
R172
R171
R164
C178
R165
C177
R163
R161
R167
C181
C175
IC105
C179
LP102
C173
C174
C176
C163
R190
C183
R153
D121
R154
Q122
R155
C186
C184
C185
XT103
D123
R191
D120
D106
Q127
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L120
JA101
L101
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C191
R159
C160
C157
R158
C161
R147
C164
R160
R146
C165
R148
C167
C158
R149
R151
C110
C156
C154
R157
C159
C150
R150
C155
T107
C192
R156
C153
C166
C168
IC104
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C149
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Q108
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C195
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R121
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C196
C122
Q107
R122
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D103
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R134
C148
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C133
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R181
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D109
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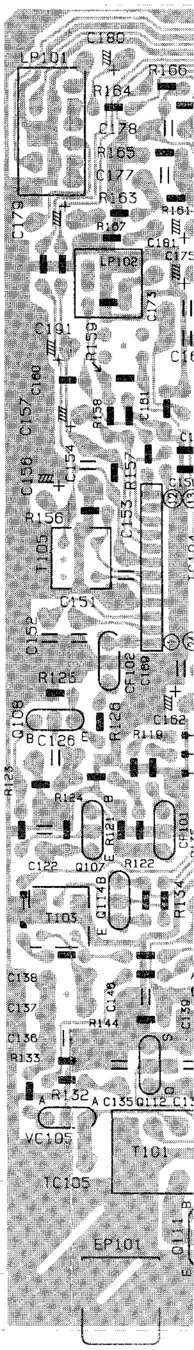
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R156
C153
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C162
R119
R123
R124
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T103
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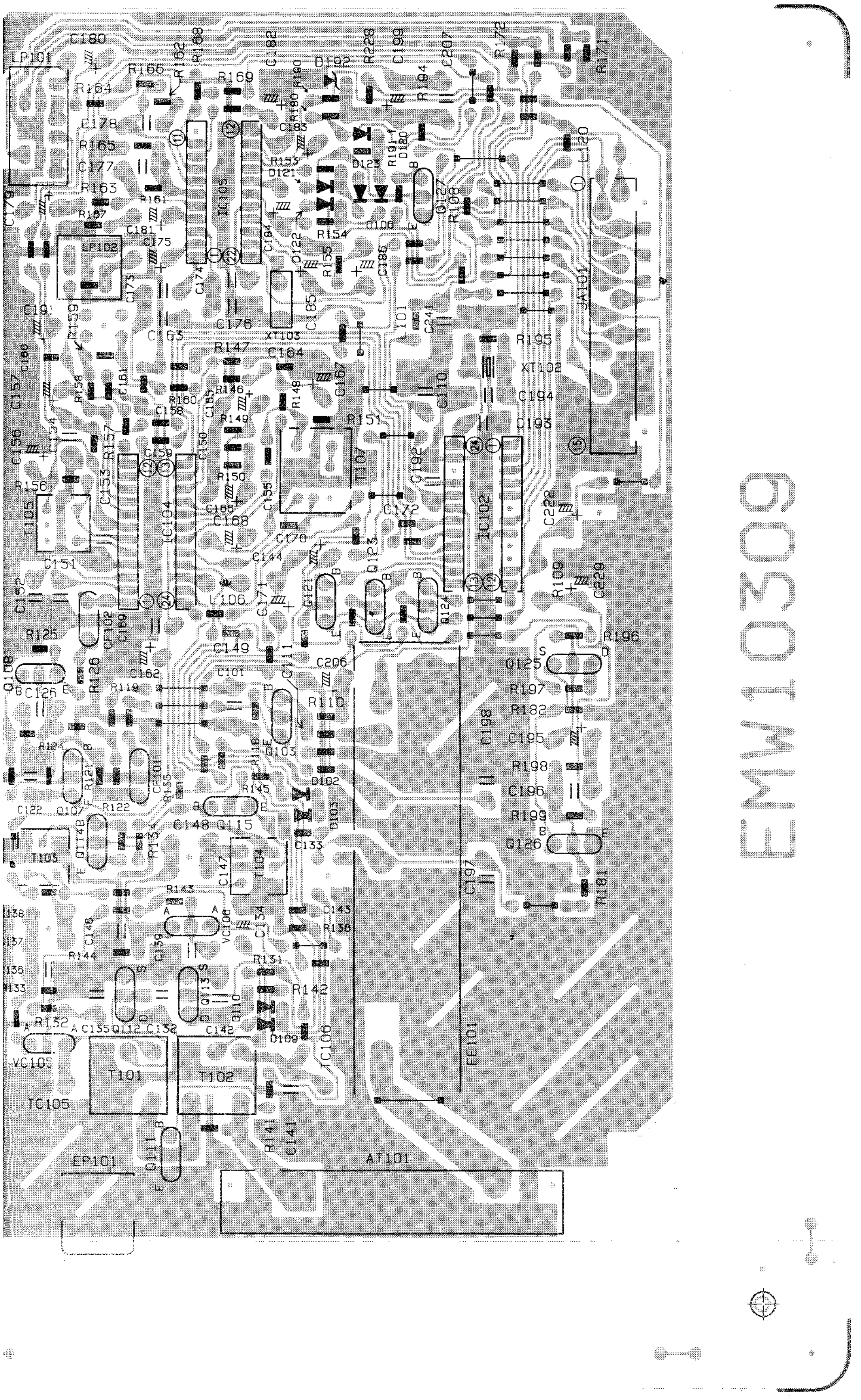
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XT102
XT103
LP101
LP102
VC105
VC106
TC105
TC106

PARTS LIST

Note : All printed circuit boards and its assemblies are not available as service parts.

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■ENH-230 ☐ Main & Volume PC Board Ass'y 2-10
■ENA-141 ☐ Tuner PC Board Ass'y 2-13
■ENE-090 ☐ Source Selector & Power Supply PC Board Ass'y 2-16
Accessories List 2-19
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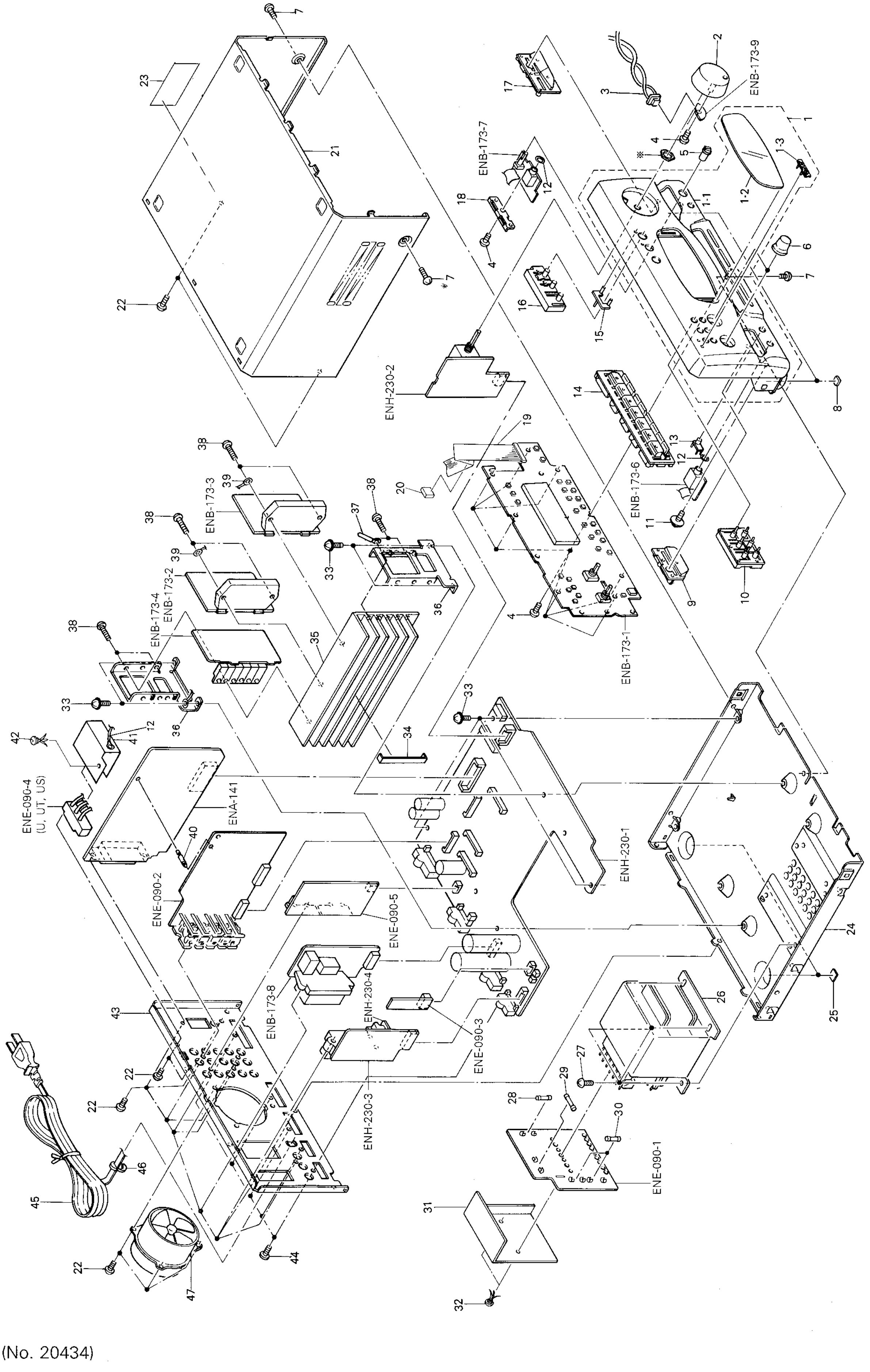
General Exploded View and Parts List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45
46
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※
ENB-173-9
ENB-173-7
ENB-173-6
ENB-173-1
ENB-173-3
ENB-173-2
ENB-173-4
ENB-173-8
ENH-230-2
ENH-230-1
ENH-230-4
ENH-230-3
ENE-090-4
(U, UT, US)
ENA-141
ENE-090-2
ENE-090-5
ENE-090-3
ENE-090-1

※ mark indicates attached parts.

Parts List

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-RXMXG9BKE(S	FRONT PANEL ASSY	1		
	1-1	E102622-009	FRONT PANEL	1		A
		E102622-008	FRONT PANEL	1		BS
		E102622-008	FRONT PANEL	1		EF
		E102622-008	FRONT PANEL	1		EN
		E102622-008	FRONT PANEL	1		G
		E102622-008	FRONT PANEL	1		GI
		E102622-009	FRONT PANEL	1		U
		E102622-009	FRONT PANEL	1		US
		E102622-009	FRONT PANEL	1		UT
	1-2	E308184-001	WINDOW SCREEN	1		
	1-3	E406971-221	JVC MARK	1		
	2	E308187-002	VOLUME KNOB	1		
	3	EWS142-033	SOCKET WIRE	1	AW990	
	4	SDSF2608Z	SCREW	10		
	5	E407233-001	KNOB	1		
	6	E308189-002	KNOB	2		
	7	SDSG3006M	SCREW	3		
	8	E406855-008	SPACER	1	FRONT FOOT	
	9	E207583-001	PUSH BUTTON ASSY	1		
	10	E207579-001	PUSH BUTTON	1		
	11	E407098-001	SPECIAL SCREW	1		
	12	EWT021-031	TERMINAL WIRE	1		U
		EWT021-031	TERMINAL WIRE	1		US
		EWT021-031	TERMINAL WIRE	1		UT
	13	E407232-001	REMOTE LENS	1		
	14	E207580-006	PUSH BUTTON ASSY	1		
	15	E407228-001	INDICATOR	1		
	16	E207578-001	PUSH BUTTON	1		
	17	E207586-002	PUSH BUTTON ASSY	1		
	18	E407234-001	BRACKET	1		
	19	EWR127K-14TT	FLAT WIRE	1	FC901	
	20	E3400-431	SPACER	1		
	21	E207591-001	METAL COVER	1		
	22	E73273-003	SPECIAL SCREW	26		
		E73273-003	SPECIAL SCREW	2		U
		E73273-003	SPECIAL SCREW	2		US
		E73273-003	SPECIAL SCREW	2		UT
	23	E308522-034	RATING LABEL	2		UT
	24	E102624-001	CHASSIS BASE	1		
	25	E406855-005	SPACER	1	REAR FOOT	
⚠	26	ETP1150-49EA	POWER TRANSFORMER	1		A
⚠		ETP1150-49EA	POWER TRANSFORMER	1		EF
⚠		ETP1150-49EA	POWER TRANSFORMER	1		EN
⚠		ETP1150-49EA	POWER TRANSFORMER	1		G
⚠		ETP1150-49EA	POWER TRANSFORMER	1		GI
⚠		ETP1150-49EABS	POWER TRANSFORMER	1		BS
⚠		ETP1150-49FA	POWER TRANSFORMER	1		U
⚠		ETP1150-49FA	POWER TRANSFORMER	1		US
⚠		ETP1150-49FA	POWER TRANSFORMER	1		UT
	27	E65389-004	SPECIAL SCREW	4		
⚠	28	QMF51A2-1R25S	FUSE	1	F001 (T1.25A/250V)	A
⚠		QMF51A2-1R25S	FUSE	1	F001 (T1.25A/250V)	EF
⚠		QMF51A2-1R25S	FUSE	1	F001 (T1.25A/250V)	EN
⚠		QMF51A2-1R25S	FUSE	1	F001 (T1.25A/250V)	G

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
⚠		QMF51A2-1R25S	FUSE	1	F001 (T1.25A/250V)	GI
⚠		QMF51A2-2R5S	FUSE	1	F001 (T2.5A/250V)	U
⚠		QMF51A2-2R5S	FUSE	1	F001 (T2.5A/250V)	US
⚠		QMF51A2-2R5S	FUSE	1	F001 (T2.5A/250V)	UT
⚠		QMF51E2-1R25SBS	FUSE	1	F001 (T1.25A/250V)	BS
⚠	29	QMF51A2-1R25S	FUSE	1	F002 (T1.25A/250V)	U
⚠		QMF51A2-1R25S	FUSE	1	F002 (T1.25A/250V)	US
⚠		QMF51A2-1R25S	FUSE	1	F002 (T1.25A/250V)	UT
⚠	30	QMF51A2-2R0S	FUSE	1	F101, F102 (T2.0A/250V)	A
⚠		QMF51A2-2R0S	FUSE	1	F101, F102 (T2.0A/250V)	EF
⚠		QMF51A2-2R0S	FUSE	1	F101, F102 (T2.0A/250V)	EN
⚠		QMF51A2-2R0S	FUSE	1	F101, F102 (T2.0A/250V)	G
⚠		QMF51A2-2R0S	FUSE	1	F101, F102 (T2.0A/250V)	GI
⚠		QMF51A2-2R0S	FUSE	1	F101, F102 (T2.0A/250V)	U
⚠		QMF51A2-2R0S	FUSE	1	F101, F102 (T2.0A/250V)	US
⚠		QMF51A2-2R0S	FUSE	1	F101, F102 (T2.0A/250V)	UT
⚠		QMF51E2-2R0SBS	FUSE	1	F101, F102 (T2.0A/250V)	BS
	31	E308520-002	PROTECT COVER	1		
	32	E48729-008	PLASTIC RIVET	2		
	33	GBSG3008CC	SCREW	7		
	34	EXO090008H05S	SPACER	1		
	35	E308190-003	HEAT SINK	1		
	36	E308191-002	HEAT SINK BRACKET	1		
	37	E72018-001	WIRE CLAMP	1		
	38	SBSG3014CC	SCREW	8		
	39	EWT051-006K	TERMINAL WIRE	1		
	40	E308544-001	FASTENER	1		
	41	E308810-001	PROTECT COVER	1		U
		E308810-001	PROTECT COVER	1		US
		E308810-001	PROTECT COVER	1		UT
	42	E48729-009	PLASTIC RIVET	1		U
		E48729-009	PLASTIC RIVET	1		US
		E48729-009	PLASTIC RIVET	1		UT
	43	E207589-004	REAR PANEL	1		U
		E207589-004	REAR PANEL	1		US
		E207589-004	REAR PANEL	1		UT
		E207589-005	REAR PANEL	1		EF
		E207589-005	REAR PANEL	1		EN
		E207589-005	REAR PANEL	1		G
		E207589-005	REAR PANEL	1		GI
		E207589-006	REAR PANEL	1		A
		E207589-006	REAR PANEL	1		BS
	44	SBSG3006CC	SCREW	5		
⚠	45	QMP25F0-244	POWER CORD	1		A
⚠		QMP3900-200	POWER CORD	1		EF
⚠		QMP3900-200	POWER CORD	1		EN
⚠		QMP3900-200	POWER CORD	1		US
⚠		QMP39A0-200	POWER CORD	1		G
⚠		QMP39A0-200	POWER CORD	1		GI
⚠		QMP5530-0085BS	POWER CORD	1		BS
⚠		QMP7520-200	POWER CORD	1		U
⚠		QMP7520-200	POWER CORD	1		UT
⚠	46	QHS3876-162	CORD STOPPER	1		A
⚠		QHS3876-162	CORD STOPPER	1		EF
⚠		QHS3876-162	CORD STOPPER	1		EN

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
⚠		QHS3876-162	CORD STOPPER	1		G
⚠		QHS3876-162	CORD STOPPER	1		GI
⚠		QHS3876-162	CORD STOPPER	1		U
⚠		QHS3876-162	CORD STOPPER	1		US
⚠		QHS3876-162	CORD STOPPER	1		UT
⚠		QHS3876-162BS	CORD STOPPER	1		BS
	47	E206880-003	FAN ASSY	1		
	—	E61029-011	NUMBER LABEL	1		
	—	QZL1031-101	SEV LABEL	1		EF
	—	E70027-001	APRROVAL LABEL	1		EN
	—	E407619-020	FTZ LABEL	1		G
	—	E75040-035	GI LABEL	1		GI

⚠ SAFETY PARTS

The Marks for Designated Areas

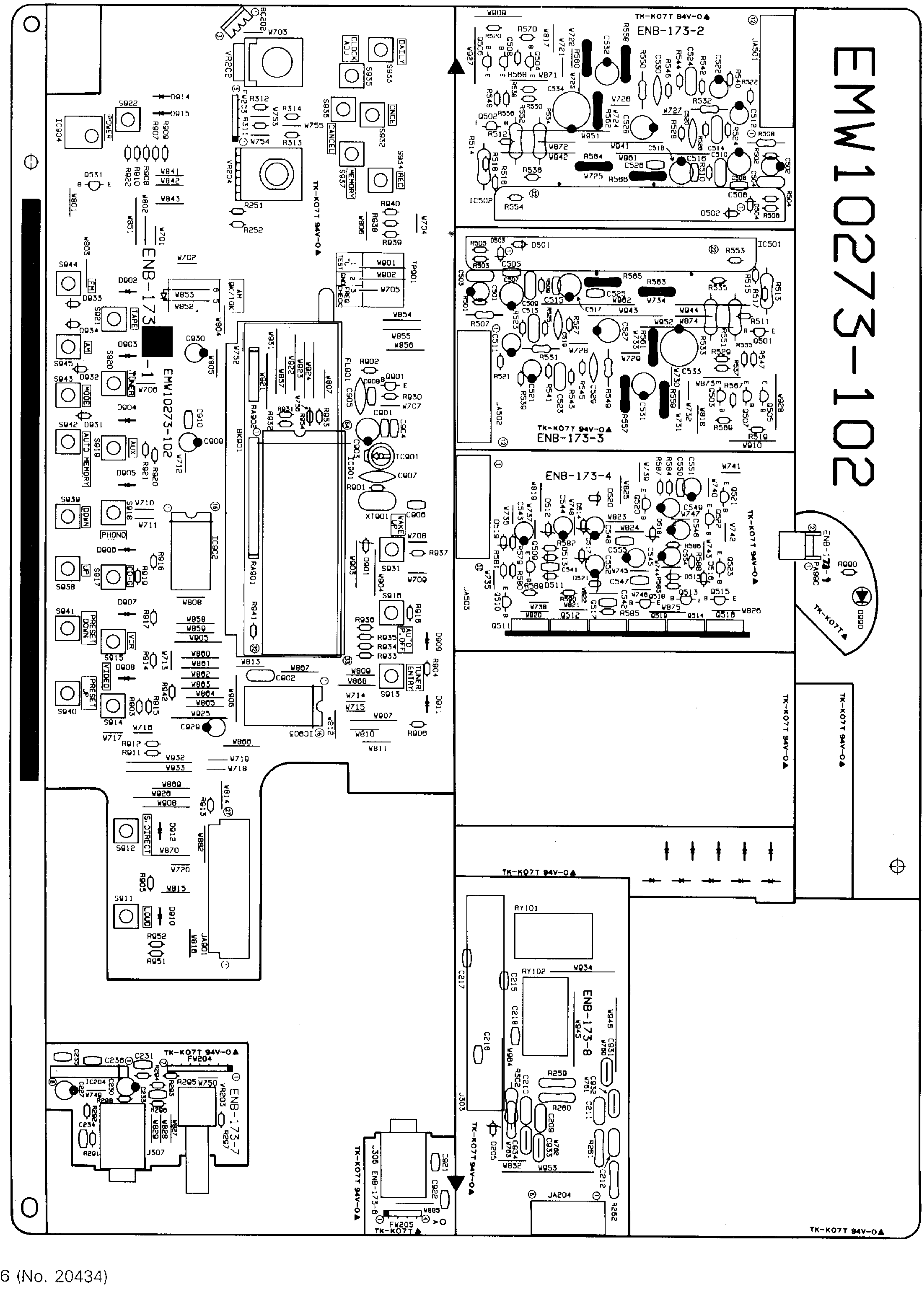
A	Australia	EN	Scandinavia	EF	Continental Europe
BS	the U.K.	G	Germany	GI	Itary
US	Singapore	UT	Taiwan	U	Universal Type

No mark indicates all areas.

Printed Circuit Board Ass'y and Parts List

■ENB-173☐ Front, Speaker & Amplifier PC Board Ass'y

Note : ENB-173☐ varies according to the areas employed. See note (1) when placing an order.


EMW10273-102
ENB-173-1
EMW10273-102
ENB-173-2
ENB-173-3
ENB-173-4
ENB-173-6
ENB-173-7
ENB-173-8
TK-K07T 94V-0▲
POWER
FM
TAPE
AM
TUNER
MODE
AUTO MEMORY
AUX
DOWN
PHONO
UP
CD-G
PRESET DOWN
VCR
VIDEO
PRESET UP
S.DIRECT
LOUD
CLOCK ADJ
DAILY
ONCE
CANCEL
MEMORY
REC
AM 9K/10K
FREQ CHECK
WAKE UP
AUTO P.OFF
TUNER ENTRY
IC904
IC902
IC903
IC501
IC502
IC204
FL901
XT901
TC901
BK901
RA901
RA902
VR202
VR204
VR203
RY101
RY102
JA501
JA502
JA503
JA801
JA204
J306
J307
J303
PA990
D990
FW204
FW205
BC202

Note (1)

PC Board Ass'y	Version	Designated Areas
ENB-173 C	US UT U	Singapore Taiwan Universal Type
ENB-173 D	A	Australia
ENB-173 E	EN EF	Scandinavia Continental Europe
ENB-173 F	BS	the U.K.
ENB-173 G	G	Germany
ENB-173 H	GI	Italy

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION*	AREA
	Q501	2SA933S(R,S)	SILICON	
	Q502	2SA933S(R,S)	SILICON	
	Q503	2SA933S(R,S)	SILICON	
	Q504	2SA933S(R,S)	SILICON	
	Q505	2SA933S(R,S)	SILICON	
	Q506	2SA933S(R,S)	SILICON	
	Q507	DTC144ES	SILICON ROHM	
	Q508	DTC144ES	SILICON ROHM	
	Q509	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q510	2SA933S(R,S)	SILICON	
	Q511	2SB1187(E,F)	SILICON	
	Q512	2SB1187(E,F)	SILICON	
	Q513	2SA933S(R,S)	SILICON	
	Q514	2SB1187(E,F)	SILICON	
	Q515	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q516	2SD2061(F,G)	SILICON ROHM	
	Q517	2SD2061(F,G)	SILICON ROHM	
	Q518	2SA933S(R,S)	SILICON	
	Q519	2SB1187(E,F)	SILICON	
	Q520	DTA144ES	SILICON ROHM	
	Q521	DTC144ES	SILICON ROHM	
	Q522	DTA144ES	SILICON ROHM	
	Q523	DTC144ES	SILICON ROHM	
	Q531	DTC114YS	SILICON ROHM	
	Q901	DTA114YS	SILICON ROHM	

⚠ : SAFETY PARTS

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC204	BA15218N	I.C. ROHM	
	IC501	STK400-040	I.C. SANYO	
	IC502	STK400-040	I.C. SANYO	
	IC901	HD614089SD57	I.C. HITACHI	
	IC902	TC74HC595AP	I.C. TOSHIBA	
	IC903	TC74HC595AP	I.C. TOSHIBA	
	IC904	GP1U901X	I.C. SHARP	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	D205	MTZ24JC	ZENER ROHM	
	D501	1SS119	SILICON HITACHI	
	D502	1SS119	SILICON HITACHI	
	D503	1SS119	SILICON HITACHI	
	D504	1SS119	SILICON HITACHI	
	D511	1SS119	SILICON HITACHI	
	D512	MTZ10JC	ZENER ROHM	
	D513	1SS119	SILICON HITACHI	
	D514	MTZ11JC	ZENER ROHM	
	D515	RD13JSB3	ZENER NEC	
	D516	MTZ13JC	ZENER ROHM	
	D517	MTZ6.2JC	ZENER ROHM	
	D518	MTZ11JC	ZENER ROHM	
	D519	1SS119	SILICON HITACHI	
	D520	MTZ13JC	ZENER ROHM	
	D521	MTZ7.5JC	ZENER ROHM	
	D901	MTZ5.6JC	ZENER ROHM	
	D902	SLR-342VC3F	L.E.D. ROHM	
	D903	SLR-342VC3F	L.E.D. ROHM	
	D904	SLR-342VC3F	L.E.D. ROHM	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	D905	SLR-342VC3F	L.E.D. ROHM	
	D906	SLR-342VC3F	L.E.D. ROHM	
	D907	SLR-342VC3F	L.E.D. ROHM	
	D908	SLR-342VC3F	L.E.D. ROHM	
	D909	SLR-342VC3F	L.E.D. ROHM	
	D910	SLR-342VC3F	L.E.D. ROHM	
	D911	SLR-342MCA47	L.E.D. ROHM	
	D912	SLR-342VC3F	L.E.D. ROHM	
	D914	SLR-342VC3F	L.E.D. ROHM	
	D915	SLR-342VC3F	L.E.D. ROHM	
	D931	1SS119	SILICON HITACHI	U
	D931	1SS119	SILICON HITACHI	US
	D931	1SS119	SILICON HITACHI	UT
	D933	1SS119	SILICON HITACHI	A
	D933	1SS119	SILICON HITACHI	U
	D933	1SS119	SILICON HITACHI	US
	D933	1SS119	SILICON HITACHI	UT
	D934	1SS119	SILICON HITACHI	GI
	D990	LN282RPX	L.E.D.	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C209	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C210	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C211	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C212	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C215	QCBB1HK-331	330PF 50V CERAMIC	G
	C215	QCBB1HK-331	330PF 50V CERAMIC	GI
	C216	QCBB1HK-331	330PF 50V CERAMIC	G
	C216	QCBB1HK-331	330PF 50V CERAMIC	GI
	C217	QCBB1HK-331	330PF 50V CERAMIC	G
	C217	QCBB1HK-331	330PF 50V CERAMIC	GI
	C218	QCBB1HK-331	330PF 50V CERAMIC	G
	C218	QCBB1HK-331	330PF 50V CERAMIC	GI
	C227	QER41CM-106	10MF 16V ELECTRO	
	C230	QER41CM-106	10MF 16V ELECTRO	
	C231	QCBB1HK-101	100PF 50V CERAMIC	
	C233	QCBB1HK-101	100PF 50V CERAMIC	
	C234	QCGB1HK-102	1000PF 50V CERAMIC	
	C235	QCVB1CM-103	0.01MF 16V CERAMIC	
	C236	QCVB1CM-103	0.01MF 16V CERAMIC	
	C501	EEZ5009-106	10MF ELECTRO	
	C502	EEZ5009-106	10MF ELECTRO	
	C503	QFN81HJ-392	3900PF 50V MYLAR	
	C504	QFN81HJ-392	3900PF 50V MYLAR	
	C505	QCBB1HK-101	100PF 50V CERAMIC	
	C506	QCBB1HK-101	100PF 50V CERAMIC	
	C507	EEZ5009-106	10MF ELECTRO	
	C508	EEZ5009-106	10MF ELECTRO	
	C509	QFN81HJ-333	0.033MF 50V MYLAR	
	C510	QFN81HJ-333	0.033MF 50V MYLAR	
	C511	EEZ5009-106	10MF ELECTRO	
	C512	EEZ5009-106	10MF ELECTRO	
	C513	QFLB1HJ-101	100PF 50V MYLAR	
	C514	QFLB1HJ-101	100PF 50V MYLAR	
	C515	QCBB1HK-101	100PF 50V CERAMIC	
	C516	QCBB1HK-101	100PF 50V CERAMIC	
	C517	EEZ5009-106	10MF ELECTRO	
	C518	EEZ5009-106	10MF ELECTRO	
	C519	QCS21HJ-5R0	5PF 50V CERAMIC	
	C520	QCS21HJ-5R0	5PF 50V CERAMIC	
	C521	EEZ5009-106	10MF ELECTRO	
	C522	EEZ5009-106	10MF ELECTRO	
	C523	QFLB1HJ-101	100PF 50V MYLAR	
	C524	QFLB1HJ-101	100PF 50V MYLAR	
	C525	QCBB1HK-101	100PF 50V CERAMIC	
	C526	QCBB1HK-101	100PF 50V CERAMIC	
	C527	EEZ5009-475	4.7MF ELECTRO	
	C528	EEZ5009-475	4.7MF ELECTRO	
	C529	QCS21HJ-5R0	5PF 50V CERAMIC	
	C530	QCS21HJ-5R0	5PF 50V CERAMIC	
	C531	QETB1VM-227M	220MF 35V ELECTRO	
	C532	QETB1VM-227M	220MF 35V ELECTRO	
	C533	QETB1VM-477EE	470MF 35V ELECTRO	
	C534	QETB1VM-477EE	470MF 35V ELECTRO	
	C541	QCVB1CM-103	0.01MF 16V CERAMIC	
	C542	QCVB1CM-103	0.01MF 16V CERAMIC	
	C543	QET41EM-106	10MF 25V ELECTRO	
	C544	QET41AM-477	470MF 10V ELECTRO	
	C545	QET41CM-226	22MF 16V ELECTRO	
	C546	QET41CM-226	22MF 16V ELECTRO	
	C547	QCVB1CM-103	0.01MF 16V CERAMIC	
	C548	QET41CM-226	22MF 16V ELECTRO	
	C549	QET41CM-226	22MF 16V ELECTRO	
	C550	QCVB1CM-103	0.01MF 16V CERAMIC	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C551	QET41CM-476	47MF 16V ELECTRO	
	C552	QET41AM-476	47MF 10V ELECTRO	
	C554	QET41CM-226	22MF 16V ELECTRO	
	C555	QCVB1CM-103	0.01MF 16V CERAMIC	
	C901	QCVB1CM-103	0.01MF 16V CERAMIC	
	C902	QCZ0202-155	1.5MF 25V CERAMIC	
	C903	QET41AM-227	220MF 10V ELECTRO	
	C904	QCGB1HK-102	1000PF 50V CERAMIC	
	C905	QCF11HP-103	0.01MF 50V CERAMIC	
	C906	QCVB1CM-103	0.01MF 16V CERAMIC	
	C907	QCT26CH-120	12PF 50V CERAMIC	
	C909	QEK51HM-105G	1MF 50V ELECTRO	
	C910	QCVB1CM-103	0.01MF 16V CERAMIC	
	C921	QCBB1HK-471	470PF 50V CERAMIC	G
	C921	QCBB1HK-471	470PF 50V CERAMIC	GI
	C922	QCBB1HK-471	470PF 50V CERAMIC	G
	C922	QCBB1HK-471	470PF 50V CERAMIC	GI
	C929	QER51HM-475	4.7MF 50V ELECTRO	
	C930	QER51HM-475	4.7MF 50V ELECTRO	
	C930	QET41HM-475	4.7MF 50V ELECTRO	
	C931	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C932	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C933	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C934	QFVB1HJ-224N	0.22MF 50V T.FILM	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R251	QRD167J-821	820 1/6W CARBON	
	R252	QRD167J-821	820 1/6W CARBON	
	R259	QRD148J-100	10 1/4W CARBON	
	R260	QRD148J-100	10 1/4W CARBON	
	R261	QRD148J-100	10 1/4W CARBON	
	R262	QRD148J-100	10 1/4W CARBON	
	R291	QRD167J-102	1K 1/6W CARBON	
	R292	QRD167J-103	10K 1/6W CARBON	
	R293	QRD167J-104	100K 1/6W CARBON	
	R294	QRD167J-331	330 1/6W CARBON	
	R295	QRD167J-681	680 1/6W CARBON	
	R296	QRD167J-104	100K 1/6W CARBON	
	R297	QRD167J-562	5.6K 1/6W CARBON	
	R298	QRD167J-562	5.6K 1/6W CARBON	
	R302	QRD148J-100	10 1/4W CARBON	
	R501	QRD167J-104	100K 1/6W CARBON	
	R502	QRD167J-104	100K 1/6W CARBON	
	R503	QRD167J-102	1K 1/6W CARBON	
	R504	QRD167J-102	1K 1/6W CARBON	
	R505	QRD167J-104	100K 1/6W CARBON	
	R506	QRD167J-104	100K 1/6W CARBON	
	R507	ERD141J-821S	820 1/4W CARBON	
	R508	ERD141J-821S	820 1/4W CARBON	
	R509	QRD167J-473	47K 1/6W CARBON	
	R510	QRD167J-473	47K 1/6W CARBON	
	R511	QRD167J-473	47K 1/6W CARBON	
	R512	QRD167J-473	47K 1/6W CARBON	
⚠	R513	QRX012J-R22AM	0.22 1W M.FILM	
⚠	R514	QRX012J-R22AM	0.22 1W M.FILM	
	R515	QRD167J-223	22K 1/6W CARBON	
	R516	QRD167J-223	22K 1/6W CARBON	
	R517	QRD167J-223	22K 1/6W CARBON	
	R518	QRD167J-223	22K 1/6W CARBON	
	R519	QRD167J-103	10K 1/6W CARBON	
	R520	QRD167J-103	10K 1/6W CARBON	
	R521	QRD167J-104	100K 1/6W CARBON	
	R522	QRD167J-104	100K 1/6W CARBON	
	R523	QRD167J-102	1K 1/6W CARBON	
	R524	QRD167J-102	1K 1/6W CARBON	
	R525	QRD167J-104	100K 1/6W CARBON	
	R526	QRD167J-104	100K 1/6W CARBON	
	R527	QRD167J-104	100K 1/6W CARBON	
	R528	QRD167J-104	100K 1/6W CARBON	
	R529	QRD167J-102	1K 1/6W CARBON	
	R530	QRD167J-102	1K 1/6W CARBON	
	R531	ERD141J-102S	1K 1/4W CARBON	
	R532	ERD141J-102S	1K 1/4W CARBON	
⚠	R533	QRX012J-R22AM	0.22 1W M.FILM	
⚠	R534	QRX012J-R22AM	0.22 1W M.FILM	
	R535	QRD167J-223	22K 1/6W CARBON	
	R536	QRD167J-223	22K 1/6W CARBON	
	R537	QRD167J-223	22K 1/6W CARBON	
	R538	QRD167J-223	22K 1/6W CARBON	
	R539	QRD167J-104	100K 1/6W CARBON	
	R540	QRD167J-104	100K 1/6W CARBON	
	R541	QRD167J-102	1K 1/6W CARBON	
	R542	QRD167J-102	1K 1/6W CARBON	
	R543	QRD167J-104	100K 1/6W CARBON	
	R544	QRD167J-104	100K 1/6W CARBON	
	R545	QRD167J-104	100K 1/6W CARBON	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R546	QRD167J-104	100K 1/6W CARBON	
	R547	QRD167J-102	1K 1/6W CARBON	
	R548	QRD167J-102	1K 1/6W CARBON	
	R549	ERD141J-102S	1K 1/4W CARBON	
	R550	ERD141J-102S	1K 1/4W CARBON	
⚠	R551	QRX012J-R22AM	0.22 1W M.FILM	
⚠	R552	QRX012J-R22AM	0.22 1W M.FILM	
	R553	QRD167J-223	22K 1/6W CARBON	
	R554	QRD167J-223	22K 1/6W CARBON	
	R555	QRD167J-223	22K 1/6W CARBON	
	R556	QRD167J-223	22K 1/6W CARBON	
⚠	R557	QRZ0077-101	100 1/4W FUSIBLE	
⚠	R558	QRZ0077-101	100 1/4W FUSIBLE	
⚠	R559	QRZ0077-101	100 1/4W FUSIBLE	
⚠	R560	QRZ0077-101	100 1/4W FUSIBLE	
⚠	R561	QRZ0077-470	47 1/4W FUSIBLE	
⚠	R562	QRZ0077-470	47 1/4W FUSIBLE	
⚠	R563	QRZ0077-470	47 1/4W FUSIBLE	
⚠	R564	QRZ0077-470	47 1/4W FUSIBLE	
⚠	R565	QRZ0077-100	10 1/4W FUSIBLE	
⚠	R566	QRZ0077-100	10 1/4W FUSIBLE	
	R567	QRD167J-103	10K 1/6W CARBON	
	R568	QRD167J-103	10K 1/6W CARBON	
	R569	QRD167J-103	10K 1/6W CARBON	
	R570	QRD167J-103	10K 1/6W CARBON	
	R579	QRD167J-103	10K 1/6W CARBON	
	R580	QRD167J-332	3.3K 1/6W CARBON	
	R581	QRD167J-332	3.3K 1/6W CARBON	
	R582	QRD167J-472	4.7K 1/6W CARBON	
	R583	QRD167J-222	2.2K 1/6W CARBON	
	R584	QRD167J-332	3.3K 1/6W CARBON	
	R585	QRD167J-392	3.9K 1/6W CARBON	
	R586	QRD167J-222	2.2K 1/6W CARBON	
	R587	QRD167J-472	4.7K 1/6W CARBON	
	R588	QRD167J-153	15K 1/6W CARBON	
	R589	QRD161J-100	10 1/6W CARBON	
	R590	QRD161J-100	10 1/6W CARBON	
	R901	QRD167J-473	47K 1/6W CARBON	
	R902	QRD167J-104	100K 1/6W CARBON	
	R903	QRD167J-821	820 1/6W CARBON	
	R904	QRD167J-561	560 1/6W CARBON	
	R905	QRD167J-471	470 1/6W CARBON	
	R906	QRD167J-391	390 1/6W CARBON	
	R908	QRD167J-331	330 1/6W CARBON	A
	R908	QRD167J-201	200 1/6W CARBON	BS
	R908	QRD167J-331	330 1/6W CARBON	EF
	R908	QRD167J-331	330 1/6W CARBON	EN
	R908	QRD167J-331	330 1/6W CARBON	G
	R908	QRD167J-331	330 1/6W CARBON	GI
	R908	QRD167J-331	330 1/6W CARBON	U
	R908	QRD167J-331	330 1/6W CARBON	US
	R908	QRD167J-331	330 1/6W CARBON	UT
	R909	QRD167J-331	330 1/6W CARBON	A
	R909	QRD167J-201	200 1/6W CARBON	BS
	R909	QRD167J-331	330 1/6W CARBON	EF
	R909	QRD167J-331	330 1/6W CARBON	EN
	R909	QRD167J-331	330 1/6W CARBON	G
	R909	QRD167J-331	330 1/6W CARBON	GI
	R909	QRD167J-331	330 1/6W CARBON	U
	R909	QRD167J-331	330 1/6W CARBON	US
	R909	QRD167J-331	330 1/6W CARBON	UT
	R911	QRD167J-103	10K 1/6W CARBON	
	R912	QRD167J-103	10K 1/6W CARBON	
	R913	QRD167J-103	10K 1/6W CARBON	
	R914	QRD161J-272	2.7K 1/6W CARBON	
	R915	QRD161J-272	2.7K 1/6W CARBON	
	R916	QRD161J-272	2.7K 1/6W CARBON	
	R917	QRD167J-432	4.3K 1/6W CARBON	
	R918	QRD167J-432	4.3K 1/6W CARBON	
	R919	QRD167J-822	8.2K 1/6W CARBON	
	R920	QRD167J-822	8.2K 1/6W CARBON	
	R921	QRD167J-243	24K 1/6W CARBON	
	R922	QRD167J-243	24K 1/6W CARBON	
	R937	QRD167J-103	10K 1/6W CARBON	
	R938	QRD167J-103	10K 1/6W CARBON	
	R939	QRD167J-103	10K 1/6W CARBON	
	R940	QRD167J-103	10K 1/6W CARBON	
	R941	QRD167J-104	100K 1/6W CARBON	
	R942	QRD167J-223	22K 1/6W CARBON	
	R951	QRD167J-300	30 1/6W CARBON	
	R952	QRD167J-300	30 1/6W CARBON	
	R953	QRD167J-300	30 1/6W CARBON	
	R954	QRD167J-300	30 1/6W CARBON	
	R990	QRD167J-392	3.9K 1/6W CARBON	
	VR202	QVGA81W-E15D	100K VARIABLE	
	VR203	QVAB80B-E54C	50K VARIABLE	
	VR204	QVJB81A-E53C	5K VARIABLE	

⚠ : SAFETY PARTS

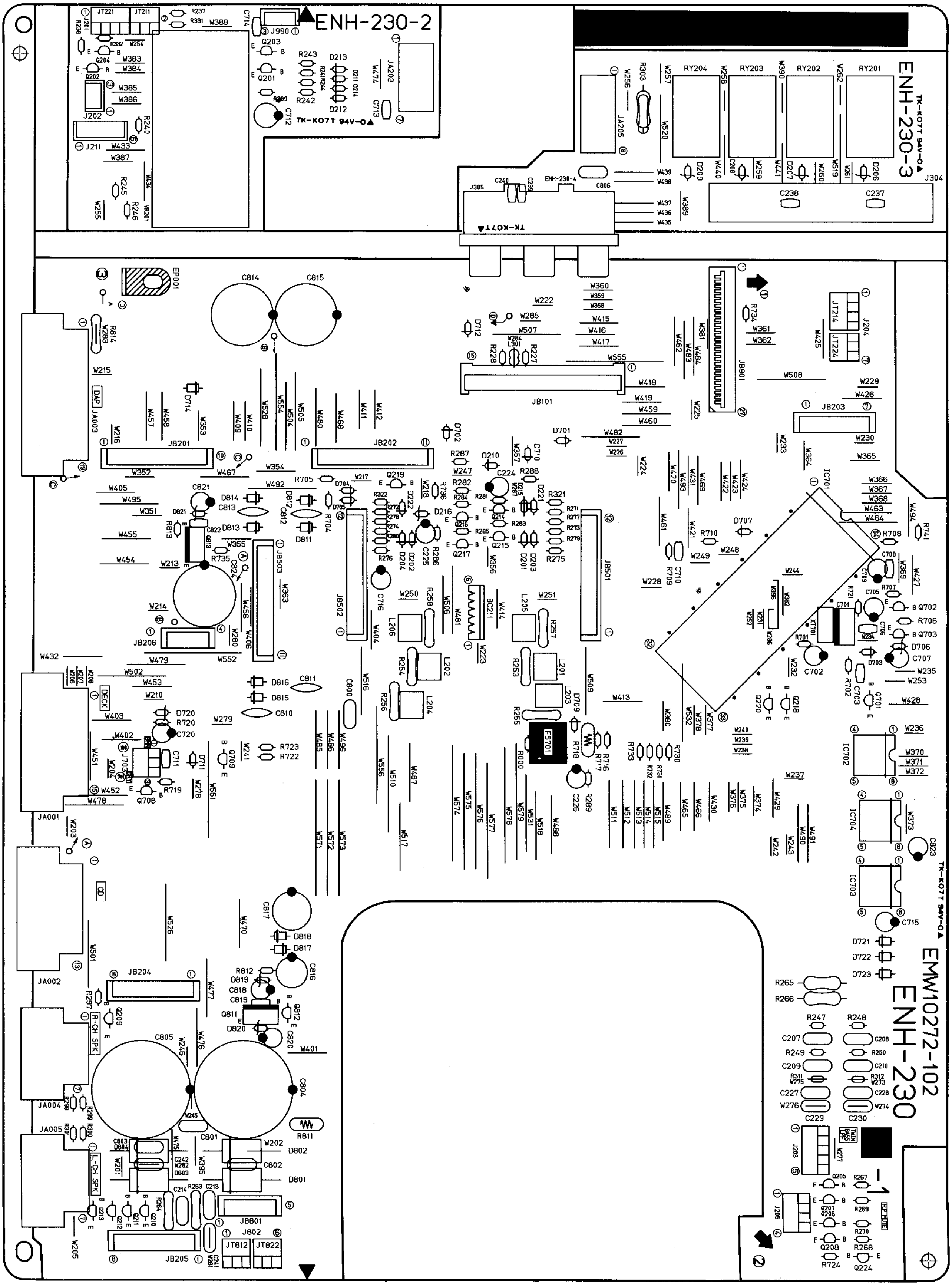
Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	J303	EMB90TV-804A	SPEAKER TERMINAL	
	J306	QMS3L40-ED0H	MINI JACK	
	J307	QMS3L40-ED0H	MINI JACK	
	S911	ESP0001-023M	TACT SWITCH(AUTO LOUDNESS)	
	S912	ESP0001-023M	TACT SWITCH(SOURCE DIRECT)	
	S913	ESP0001-023M	TACT SWITCH(TUNER ENTRY)	
	S914	ESP0001-023M	TACT SWITCH(VIDEO)	
	S915	ESP0001-023M	TACT SWITCH(VCR)	
	S916	ESP0001-023M	TACT SWITCH(AUTO POWER OFF)	
	S917	ESP0001-023M	TACT SWITCH(CD/CDG)	
	S918	ESP0001-023M	TACT SWITCH(PHONO)	
	S919	ESP0001-023M	TACT SWITCH(AUX)	
	S920	ESP0001-023M	TACT SWITCH(TUNER)	
	S921	ESP0001-023M	TACT SWITCH(TAPE)	
	S922	ESP0001-023M	TACT SWITCH(POWER)	
	S931	ESP0001-023M	TACT SWITCH(WAKE UP/SLEEP)	
	S932	ESP0001-023M	TACT SWITCH(ONCE TIMER)	
	S933	ESP0001-023M	TACT SWITCH(DAILY TIMER)	
	S934	ESP0001-023M	TACT SWITCH(REC TIMER)	
	S935	ESP0001-023M	TACT SWITCH(CLOCK ADJ)	
	S936	ESP0001-023M	TACT SWITCH(CANCEL)	
	S937	ESP0001-023M	TACT SWITCH(MEMORY)	
	S938	ESP0001-023M	TACT SWITCH(UP)	
	S939	ESP0001-023M	TACT SWITCH(DOWN)	
	S940	ESP0001-023M	TACT SWITCH(PRESET UP)	
	S941	ESP0001-023M	TACT SWITCH(PRESET DOWN)	
	S942	ESP0001-023M	TACT SWITCH(PRESET SCAN)	
	S943	ESP0001-023M	TACT SWITCH(AUTO/MONO)	
	S944	ESP0001-023M	TACT SWITCH(FM)	
	S945	ESP0001-023M	TACT SWITCH(AM)	
	BC202	EWS293-0132	SOCKET WIRE(3PIN)	
	BK901	E308192-001	FL HOLDER	
	FL901	ELU0001-139	FL TUBE	
	FS901	E306805-014	FELT SPACER	
	FW203	EWR35B-10LST	FLAT WIRE(5PIN)	
	FW204	EWR37B-08LST	FLAT WIRE(7PIN)	
	FW205	EWR34B-10LST	FLAT WIRE(4PIN)	
	JA204	EMV7125-008R	CONNECTOR(8PIN)	
	JA501	EMV7125-012R	CONNECTOR(12PIN)	
	JA502	EMV7125-012R	CONNECTOR(12PIN)	
	JA503	EMV7125-011R	CONNECTOR(11PIN)	
	JA901	EMV7123-027R	CONNECTOR(27PIN)	
	PA990	EMV5103-002B	PLUG ASSY(2PIN)	
	RY101	ESK8D24-212	RELAY	
	RY102	ESK8D24-212	RELAY	
	TC901	ENZ1003-015	TRIMMER	
	XT901	ECX4194-304CF	RESONATOR	

⚠ : SAFETY PARTS

■ENH-230☐ Main & Volume PC Board Ass'y

Note : ENH-230☐ varies according to the areas employed. See note (1) when placing an order.


ENH-230-2
ENH-230-3
ENH-230-4
EMW10272-102
ENH-230
-1
TK-K07T 94V-0
JA001
JA002
JA003
JA004
JA005
JB101
JB201
JB202
JB203
JB204
JB205
JB206
JB501
JB502
JB503
JB801
JB901
J202
J203
J204
J205
J211
J304
J305
J802
J990
JT221
JT211
JT214
JT224
JT812
JT822
RY201
RY202
RY203
RY204
IC701
IC702
IC703
IC704
C804
C805
C814
C815
C816
C817
F5701
DAP
DECK
CD
R-CH SPK
L-CH SPK
EP001

Note (1)

PC Board Ass'y	Version	Designated Areas
ENH-230 A	US UT U	Singapore Taiwan Universal Type
ENH-230 B	A BS EN EF	Australia the U.K. Scandinavia Continental Europe
ENH-230 C	G GI	Germany Italy

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	Q201	2SD2144S(VW)	SILICON ROHM	
	Q202	2SD2144S(VW)	SILICON ROHM	
	Q203	2SD2144S(VW)	SILICON ROHM	
	Q204	2SD2144S(VW)	SILICON ROHM	
	Q205	2SD2144S(VW)	SILICON ROHM	
	Q206	2SD2144S(VW)	SILICON ROHM	
	Q207	2SD2144S(VW)	SILICON ROHM	
	Q208	2SD2144S(VW)	SILICON ROHM	
	Q209	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q210	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q211	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q212	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q213	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q214	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q215	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q216	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q217	2SA733A(P,Q)	SILICON	
	Q218	DTA144ES	SILICON ROHM	
	Q219	DTA114ES	SILICON ROHM	
	Q220	DTC144ES	SILICON ROHM	
	Q221	2SD2144S(VW)	SILICON ROHM	
	Q222	2SD2144S(VW)	SILICON ROHM	
	Q223	DTA144ES	SILICON ROHM	
	Q224	DTA114TS	SILICON ROHM	
	Q701	DTC114WS	SILICON	
	Q702	DTC114YS	SILICON ROHM	
	Q703	DTC144ES	SILICON ROHM	
	Q708	2SD2144S(VW)	SILICON ROHM	
	Q709	DTA123ES	SILICON ROHM	
	Q811	2SB1357(E,F)	SILICON ROHM	
	Q812	2SC3311A(Q,R)	SILICON MATSUSHITA	
	Q813	2SD2037(E,F)	SILICON ROHM	

⚠ : SAFETY PARTS

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC701	UPD78011CW-011	I.C. NEC	
	IC702	LB1639-CV	I.C. SANYO	
	IC703	LB1639-CV	I.C. SANYO	
	IC704	LB1639-CV	I.C. SANYO	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	D201	1SS119	SILICON HITACHI	
	D202	1SS119	SILICON HITACHI	
	D203	1SS119	SILICON HITACHI	
	D204	1SS119	SILICON HITACHI	
	D206	MTZ24JC	ZENER ROHM	
	D207	MTZ24JC	ZENER ROHM	
	D208	MTZ24JC	ZENER ROHM	
	D209	MTZ24JC	ZENER ROHM	
	D210	1SS119	SILICON HITACHI	
	D211	1SS119	SILICON HITACHI	
	D212	1SS119	SILICON HITACHI	
	D213	1SS119	SILICON HITACHI	
	D214	1SS119	SILICON HITACHI	
	D215	1SS119	SILICON HITACHI	
	D216	MTZ2.0JB	ZENER ROHM	
	D221	1SS119	SILICON HITACHI	
	D222	1SS119	SILICON HITACHI	
	D701	1SS119	SILICON HITACHI	
	D702	1SS119	SILICON HITACHI	
	D703	1SS119	SILICON HITACHI	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	D704	1SS119	SILICON HITACHI	
	D705	1SS119	SILICON HITACHI	
	D706	MTZ5.1JB	ZENER ROHM	
	D707	1SS119	SILICON HITACHI	
	D709	1SS119	SILICON HITACHI	
	D710	1SS119	SILICON HITACHI	
	D711	1SS119	SILICON HITACHI	
	D712	1SS119	SILICON HITACHI	
	D714	1SR139-200	SILICON ROHM	
	D720	MTZ2.0JB	ZENER ROHM	
	D721	1SR139-200	SILICON ROHM	
	D722	1SR139-200	SILICON ROHM	
	D723	1SR139-200	SILICON ROHM	
⚠	D801	30DL2FC	SILICON NIHONINTER	
⚠	D802	30DL2FC	SILICON NIHONINTER	
⚠	D803	30DL2FC	SILICON NIHONINTER	
⚠	D804	30DL2FC	SILICON NIHONINTER	
	D811	1SR139-200	SILICON ROHM	
	D812	1SR139-200	SILICON ROHM	
	D813	1SR139-200	SILICON ROHM	
	D814	1SR139-200	SILICON ROHM	
	D815	1SR35-200A	SILICON ROHM	
	D816	1SR35-200A	SILICON ROHM	
	D817	1SR139-200	SILICON ROHM	
	D818	1SR139-200	SILICON ROHM	
	D819	MTZ33JC	ZENER ROHM	
	D820	MTZ8.2JC	ZENER ROHM	
	D821	MTZ5.6JC	ZENER ROHM	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C207	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C208	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C209	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C210	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C213	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C214	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C224	QEK51EM-106	10MF 25V ELECTRO	
	C225	QEK41EM-476	47MF 25V ELECTRO	
	C226	QEB41HM-334	0.33MF 50V LLC ELECTRO	
	C237	QCBB1HK-331	330PF 50V CERAMIC	G
	C237	QCBB1HK-331	330PF 50V CERAMIC	GI
	C238	QCBB1HK-331	330PF 50V CERAMIC	G
	C238	QCBB1HK-331	330PF 50V CERAMIC	GI
	C239	QCBB1HK-331	330PF 50V CERAMIC	G
	C239	QCBB1HK-331	330PF 50V CERAMIC	GI
	C240	QCBB1HK-331	330PF 50V CERAMIC	G
	C240	QCBB1HK-331	330PF 50V CERAMIC	GI
	C241	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C242	QFVB1HJ-224N	0.22MF 50V T.FILM	
	C701	QEAD0HZ-10AA	ELECTRO	
	C702	QET41AM-476	47MF 10V ELECTRO	
	C703	QCVB1CM-103	0.01MF 16V CERAMIC	
	C705	QET41EM-106	10MF 25V ELECTRO	
	C706	QCVB1CM-103	0.01MF 16V CERAMIC	
	C707	QETB1HM-225	2.2MF 50V ELECTRO	
	C708	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C709	QET41EM-106	10MF 25V ELECTRO	
	C710	QCBB1HK-471	470PF 50V CERAMIC	
	C711	QCVB1CM-103	0.01MF 16V CERAMIC	
	C712	QET41CM-226	22MF 16V ELECTRO	
	C713	QCVB1CM-103	0.01MF 16V CERAMIC	
	C714	QCVB1CM-103	0.01MF 16V CERAMIC	
	C715	QET41AM-476	47MF 10V ELECTRO	
	C716	QET41CM-226	22MF 16V ELECTRO	
	C720	QETB0JM-477	470MF 6.3V ELECTRO	
	C800	QFN81HJ-103	0.01MF 50V MYLAR	
	C801	QFV82AJ-104	0.1MF 100V T.FILM	
	C802	QFV82AJ-104	0.1MF 100V T.FILM	
	C803	QFV82AJ-104	0.1MF 100V T.FILM	
	C804	EEW4208-568E	5600MF ELECTRO	
	C805	EEW4208-568E	5600MF ELECTRO	
	C806	QFVB1HJ-104N	0.1MF 50V T.FILM	
	C810	QCF11HP-103	0.01MF 50V CERAMIC	
	C811	QCF11HP-103	0.01MF 50V CERAMIC	
	C812	QCF11HP-103	0.01MF 50V CERAMIC	
	C813	QCF11HP-103	0.01MF 50V CERAMIC	
	C814	EET3506-338M	3300MF ELECTRO	
	C815	EET3506-338M	3300MF ELECTRO	
	C816	QETB1HM-107	100MF 50V ELECTRO	
	C817	QETB1HM-227	220MF 50V ELECTRO	
	C818	QET41HM-226	22MF 50V ELECTRO	
	C819	QCVB1CM-103	0.01MF 16V CERAMIC	
	C820	QER51HM-475	4.7MF 50V ELECTRO	
	C821	QET41HM-226	22MF 50V ELECTRO	
	C822	QCVB1CM-103	0.01MF 16V CERAMIC	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C823	QET41AM-476	47MF 10V ELECTRO	
	C824	QETB1EM-338M	3300MF 25V ELECTRO	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R	QRD167J-561	560 1/6W CARBON	
	R227	QRD167J-152	1.5K 1/6W CARBON	
	R228	QRD167J-152	1.5K 1/6W CARBON	
	R237	QRD167J-392	3.9K 1/6W CARBON	
	R238	QRD167J-392	3.9K 1/6W CARBON	
	R239	QRD167J-123	12K 1/6W CARBON	
	R240	QRD167J-123	12K 1/6W CARBON	
	R241	QRD167J-103	10K 1/6W CARBON	
	R242	QRD167J-103	10K 1/6W CARBON	
	R243	QRD167J-103	10K 1/6W CARBON	
	R244	QRD167J-103	10K 1/6W CARBON	
	R245	QRD167J-123	12K 1/6W CARBON	
	R246	QRD167J-123	12K 1/6W CARBON	
	R247	QRD167J-153	15K 1/6W CARBON	
	R248	QRD167J-153	15K 1/6W CARBON	
	R249	QRD167J-153	15K 1/6W CARBON	
	R250	QRD167J-153	15K 1/6W CARBON	
	R253	QRD148J-100	10 1/4W CARBON	
	R254	QRD148J-100	10 1/4W CARBON	
	R255	QRD148J-100	10 1/4W CARBON	
	R256	QRD148J-100	10 1/4W CARBON	
	R257	QRD148J-100	10 1/4W CARBON	
	R258	QRD148J-100	10 1/4W CARBON	
	R263	QRD148J-100	10 1/4W CARBON	
	R264	QRD148J-100	10 1/4W CARBON	
⚠	R265	QRG012J-221AM	220 1W O.M.FILM	
⚠	R266	QRG012J-221AM	220 1W O.M.FILM	
	R267	QRD167J-473	47K 1/6W CARBON	
	R268	QRD167J-473	47K 1/6W CARBON	
	R269	QRD167J-473	47K 1/6W CARBON	
	R270	QRD167J-473	47K 1/6W CARBON	
	R271	QRD167J-104	100K 1/6W CARBON	
	R272	QRD167J-104	100K 1/6W CARBON	
	R273	QRD167J-104	100K 1/6W CARBON	
	R274	QRD167J-104	100K 1/6W CARBON	
	R275	QRD167J-104	100K 1/6W CARBON	
	R276	QRD167J-104	100K 1/6W CARBON	
	R277	QRD167J-393	39K 1/6W CARBON	
	R278	QRD167J-393	39K 1/6W CARBON	
	R279	QRD167J-393	39K 1/6W CARBON	
	R280	QRD167J-393	39K 1/6W CARBON	
	R281	QRD167J-103	10K 1/6W CARBON	
	R282	QRD167J-103	10K 1/6W CARBON	
	R283	QRD167J-103	10K 1/6W CARBON	
	R284	QRD167J-103	10K 1/6W CARBON	
	R285	QRD167J-473	47K 1/6W CARBON	
	R286	QRD167J-473	47K 1/6W CARBON	
	R287	QRD167J-104	100K 1/6W CARBON	
	R288	QRD167J-222	2.2K 1/6W CARBON	
	R289	QRD167J-682	6.8K 1/6W CARBON	
	R297	QRD167J-152	1.5K 1/6W CARBON	
	R298	QRD167J-152	1.5K 1/6W CARBON	
	R299	QRD167J-152	1.5K 1/6W CARBON	
	R300	QRD167J-152	1.5K 1/6W CARBON	
	R301	QRD167J-152	1.5K 1/6W CARBON	
	R303	QRD148J-100	10 1/4W CARBON	
	R314	QRD167J-103	10K 1/6W CARBON	
	R315	QRD167J-103	10K 1/6W CARBON	
	R321	QRD167J-393	39K 1/6W CARBON	
	R322	QRD167J-393	39K 1/6W CARBON	
	R331	QRD167J-133	13K 1/6W CARBON	
	R332	QRD167J-133	13K 1/6W CARBON	
	R701	QRD167J-470	47 1/6W CARBON	
	R702	QRD167J-223	22K 1/6W CARBON	
	R704	QRD167J-103	10K 1/6W CARBON	
	R705	QRD167J-103	10K 1/6W CARBON	
	R706	QRD167J-103	10K 1/6W CARBON	
	R707	QRD167J-102	1K 1/6W CARBON	
	R708	QRD161J-100	10 1/6W CARBON	
	R709	QRD167J-473	47K 1/6W CARBON	
	R710	QRD167J-221	220 1/6W CARBON	
	R716	QRD167J-681	680 1/6W CARBON	
	R717	QRD167J-561	560 1/6W CARBON	
	R718	PTH9M04BE471TS	POSISTER	
	R719	QRD167J-152	1.5K 1/6W CARBON	
	R720	QRD167J-200	20 1/6W CARBON	A
	R720	QRD167J-430	43 1/6W CARBON	BS
	R720	QRD167J-200	20 1/6W CARBON	EF
	R720	QRD167J-200	20 1/6W CARBON	EN
	R720	QRD167J-430	43 1/6W CARBON	G

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R720	QRD167J-430	43 1/6W CARBON	GI
	R720	QRD167J-200	20 1/6W CARBON	U
	R720	QRD167J-200	20 1/6W CARBON	US
	R720	QRD167J-200	20 1/6W CARBON	UT
	R721	QRD167J-473	47K 1/6W CARBON	
	R722	QRD167J-512	5.1K 1/6W CARBON	
	R723	QRD167J-512	5.1K 1/6W CARBON	
	R724	QRD167J-102	1K 1/6W CARBON	
	R730	QRD167J-331	330 1/6W CARBON	
	R731	QRD167J-331	330 1/6W CARBON	
	R732	QRD167J-331	330 1/6W CARBON	
	R733	QRD167J-331	330 1/6W CARBON	
	R734	QRD167J-223	22K 1/6W CARBON	
	R735	QRD167J-103	10K 1/6W CARBON	
	R736	QRD167J-333	33K 1/6W CARBON	
	R741	QRD167J-223	22K 1/6W CARBON	
⚠	R811	PTH61G25AR4R7M	POSISTOR I	.M
	R812	QRD167J-332	3.3K 1/6W CARBON	
	R813	QRD167J-222	2.2K 1/6W CARBON	
	VR201	QVDC94A-E15D	100K VARIABLE	

⚠ : SAFETY PARTS

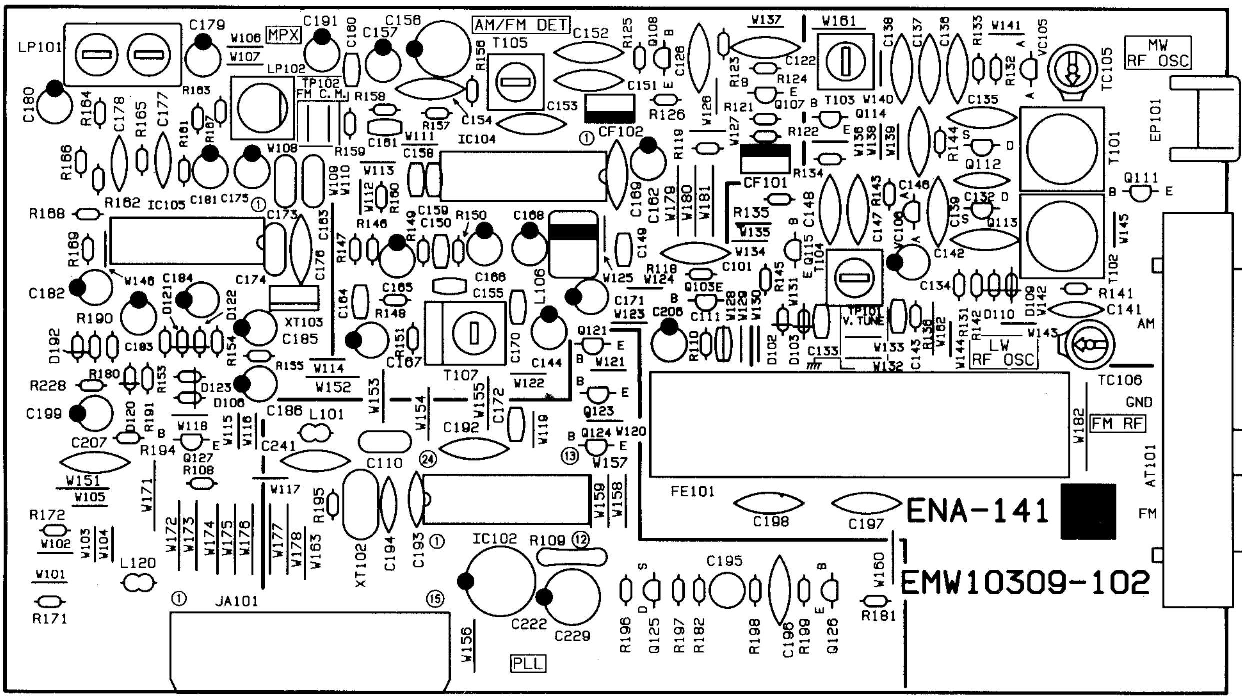
Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	J202	EMV5109-003A	PLUG ASSY(3PIN)	
	J203	EMV7122-005	CONNECTOR(5PIN)	
	J205	EMV7122-004	CONNECTOR(4PIN)	
	J211	EMV5109-006A	PLUG ASSY(6PIN)	
	J304	EMB90YV-402A	ANTENNA TERMINAL	
	J305	EMN00YV-316A	3P PIN JACK	
	J703	EMV7122-103	CONNECTOR(3PIN)	
	J990	EMV5133-003	PLUG ASSY(3PIN)	
	L201	EQL0001-R45	INDUCTOR	
	L202	EQL0001-R45	INDUCTOR	
	L203	EQL0001-R45	INDUCTOR	
	L204	EQL0001-R45	INDUCTOR	
	L205	EQL0001-R45	INDUCTOR	
	L206	EQL0001-R45	INDUCTOR	
	BC211	EWS296-0120	SOCKET WIRE(6PIN)	
	EP001	EMZ4002-001	IM EARTH PLATE	
	FS701	E306805-040	SPACER	
	FS720	E3400-431	SPACER	
	JA001	EMV7127-015	CONNECTOR(15PIN)	
	JA002	EMV7127-013	CONNECTOR(13PIN)	
	JA003	EMV7127-019	CONNECTOR(19PIN)	
	JA004	EMV7127-007	CONNECTOR(7PIN)	
	JA005	EMV7127-007	CONNECTOR(7PIN)	
	JA203	EMV7125-007R	CONNECTOR(7PIN)	
	JA205	EMV7125-008R	CONNECTOR(8PIN)	
	JB101	EMV5140-015	PLUG ASSY(15PIN)	
	JB201	EMV5125-010	PLUG ASSY(10PIN)	
	JB202	EMV5125-011	PLUG ASSY(11PIN)	
	JB203	EMV5125-007	PLUG ASSY(7PIN)	
	JB204	EMV5125-008	PLUG ASSY(8PIN)	
	JB205	EMV5125-008	PLUG ASSY(8PIN)	
	JB206	EMV5125-004	PLUG ASSY(4PIN)	
	JB501	EMV5125-012	PLUG ASSY(12PIN)	
	JB502	EMV5125-012	PLUG ASSY(12PIN)	
	JB503	EMV5125-011	PLUG ASSY(11PIN)	
	JB801	EMV5125-005	PLUG ASSY(5PIN)	
	JB901	EMV7123-027	CONNECTOR(27PIN)	
	JT211	EMV7122-103	CONNECTOR(3PIN)	
	JT214	EMV7122-004	CONNECTOR(4PIN)	
	JT221	EMV7122-004	CONNECTOR(4PIN)	
	JT224	EMV7122-103	CONNECTOR(3PIN)	
	JT812	EMV7122-103	CONNECTOR(3PIN)	
	JT822	EMV7122-103	CONNECTOR(3PIN)	
	RY201	ESK8D24-212	RELAY	
	RY202	ESK8D24-212	RELAY	
	RY203	ESK8D24-212	RELAY	
	RY204	ESK8D24-212	RELAY	
	XT701	ECX0008-380KN	RESONATOR	

⚠ : SAFETY PARTS

■ENA-141☐ Tuner PC Board Ass'y

Note : ENA-141☐ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Version	Designated Areas
ENA-141 I	US UT U	Singapore Taiwan Universal Type
ENA-141 J	A	Australia
ENA-141 K	EN EF	Scandinavia Continental Europe
ENA-141 L	G	Germany
ENA-141 M	BS	the U.K.
ENA-141 N	GI	Italy

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q103	2SC461(B,C)	SILICON	HITACHI	
	Q107	2SC535(B,C)	SILICON		
	Q108	2SC461(B,C)	SILICON	HITACHI	
	Q111	2SD2144S(VW)	SILICON	ROHM	BS
	Q111	2SD2144S(VW)	SILICON	ROHM	EF
	Q111	2SD2144S(VW)	SILICON	ROHM	EN
	Q111	2SD2144S(VW)	SILICON	ROHM	G
	Q111	2SD2144S(VW)	SILICON	ROHM	GI
	Q112	2SK301(Q,R)	F.E.T		
	Q113	2SK301(Q,R)	F.E.T		BS
	Q113	2SK301(Q,R)	F.E.T		EF
	Q113	2SK301(Q,R)	F.E.T		EN
	Q113	2SK301(Q,R)	F.E.T		G
	Q113	2SK301(Q,R)	F.E.T		GI
	Q114	2SK301(P,Q)	F.E.T	MATSUSHITA	BS
	Q114	2SK301(P,Q)	F.E.T	MATSUSHITA	EF
	Q114	2SK301(P,Q)	F.E.T	MATSUSHITA	EN
	Q114	2SK301(P,Q)	F.E.T	MATSUSHITA	G
	Q114	2SK301(P,Q)	F.E.T	MATSUSHITA	GI
	Q115	2SK301(P,Q)	F.E.T	MATSUSHITA	BS
	Q115	2SK301(P,Q)	F.E.T	MATSUSHITA	EF
	Q115	2SK301(P,Q)	F.E.T	MATSUSHITA	EN
	Q115	2SK301(P,Q)	F.E.T	MATSUSHITA	G
	Q115	2SK301(P,Q)	F.E.T	MATSUSHITA	GI
	Q121	DTA144ES	SILICON	ROHM	BS

⚠ : SAFETY PARTS

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q121	DTA144ES	SILICON	ROHM	EF
	Q121	DTA144ES	SILICON	ROHM	EN
	Q121	DTA144ES	SILICON	ROHM	G
	Q121	DTA144ES	SILICON	ROHM	GI
	Q123	DTA144ES	SILICON	ROHM	
	Q124	DTA144ES	SILICON	ROHM	
	Q125	2SK301(Q2)	F.E.T		
	Q126	2SC458(D)	SILICON		
	Q127	DTC144ES	SILICON	ROHM	

⚠ : SAFETY PARTS

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	IC102	LC7218	I.C.	SANYO	
	IC104	LA1266A	I.C.	SANYO	
	IC105	LA3401	I.C.	SANYO	

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION		AREA
	D102	1SS119	SILICON	HITACHI	BS
	D102	1SS119	SILICON	HITACHI	EF
	D102	1SS119	SILICON	HITACHI	EN
	D102	1SS119	SILICON	HITACHI	G
	D102	1SS119	SILICON	HITACHI	GI
	D103	1SS119	SILICON	HITACHI	BS
	D103	1SS119	SILICON	HITACHI	EF
	D103	1SS119	SILICON	HITACHI	EN
	D103	1SS119	SILICON	HITACHI	G
	D103	1SS119	SILICON	HITACHI	GI
	D106	1SS119	SILICON	HITACHI	
	D109	1SS119	SILICON	HITACHI	BS
	D109	1SS119	SILICON	HITACHI	EF
	D109	1SS119	SILICON	HITACHI	EN
	D109	1SS119	SILICON	HITACHI	G
	D109	1SS119	SILICON	HITACHI	GI
	D110	1SS119	SILICON	HITACHI	BS
	D110	1SS119	SILICON	HITACHI	EF
	D110	1SS119	SILICON	HITACHI	EN
	D110	1SS119	SILICON	HITACHI	G

⚠ : SAFETY PARTS

Diodes

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	D110	1SS119	SILICON HITACHI	GI
	D120	1SS119	SILICON HITACHI	
	D121	1SS119	SILICON HITACHI	
	D122	1SS119	SILICON HITACHI	
	D123	1SS119	SILICON HITACHI	
	D192	MTZ5.1JC	ZENER ROHM	
	VC105	SVC342(L)	VARICAP SANYO	
	VC106	SVC342(L)	VARICAP SANYO	BS
	VC106	SVC342(L)	VARICAP SANYO	EF
	VC106	SVC342(L)	VARICAP SANYO	EN
	VC106	SVC342(L)	VARICAP SANYO	G
	VC106	SVC342(L)	VARICAP SANYO	GI

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C101	QCF11HP-223	0.022MF 50V CERAMIC	
	C110	QCZ0202-155	1.5MF 25V CERAMIC	
	C122	QCF11HP-223	0.022MF 50V CERAMIC	
	C126	QCF11HP-223	0.022MF 50V CERAMIC	
	C132	QCS21HJ-561	560PF 50V CERAMIC	
	C133	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C134	QET41EM-106	10MF 25V ELECTRO	
	C135	QCC21EM-223	0.022MF 25V CERAMIC	
	C136	QCT26CH-180	18PF 50V CERAMIC	
	C137	QCT26CH-221	220PF 50V CERAMIC	
	C138	QCT26CH-241	240PF 50V CERAMIC	
	C139	QCC21EM-223	0.022MF 25V CERAMIC	BS
	C139	QCC21EM-223	0.022MF 25V CERAMIC	EF
	C139	QCC21EM-223	0.022MF 25V CERAMIC	EN
	C139	QCC21EM-223	0.022MF 25V CERAMIC	G
	C139	QCC21EM-223	0.022MF 25V CERAMIC	GI
	C141	QCS21HJ-270	27PF 50V CERAMIC	BS
	C141	QCS21HJ-270	27PF 50V CERAMIC	EF
	C141	QCS21HJ-270	27PF 50V CERAMIC	EN
	C141	QCS21HJ-270	27PF 50V CERAMIC	G
	C141	QCS21HJ-270	27PF 50V CERAMIC	GI
	C142	QCY21HK-272	2700PF 50V CERAMIC	BS
	C142	QCY21HK-272	2700PF 50V CERAMIC	EF
	C142	QCY21HK-272	2700PF 50V CERAMIC	EN
	C142	QCY21HK-272	2700PF 50V CERAMIC	G
	C142	QCY21HK-272	2700PF 50V CERAMIC	GI
	C143	QCHB1EZ-223	0.022MF 25V CERAMIC	BS
	C143	QCHB1EZ-223	0.022MF 25V CERAMIC	EF
	C143	QCHB1EZ-223	0.022MF 25V CERAMIC	EN
	C143	QCHB1EZ-223	0.022MF 25V CERAMIC	G
	C143	QCHB1EZ-223	0.022MF 25V CERAMIC	GI
	C144	QET41EM-106	10MF 25V ELECTRO	BS
	C144	QET41EM-106	10MF 25V ELECTRO	EF
	C144	QET41EM-106	10MF 25V ELECTRO	EN
	C144	QET41EM-106	10MF 25V ELECTRO	G
	C144	QET41EM-106	10MF 25V ELECTRO	GI
	C146	QCT26CH-680	68PF 50V CERAMIC	BS
	C146	QCT26CH-680	68PF 50V CERAMIC	EF
	C146	QCT26CH-680	68PF 50V CERAMIC	EN
	C146	QCT26CH-680	68PF 50V CERAMIC	G
	C146	QCT26CH-680	68PF 50V CERAMIC	GI
	C147	QCT26CH-220	22PF 50V CERAMIC	BS
	C147	QCT26CH-220	22PF 50V CERAMIC	EF
	C147	QCT26CH-220	22PF 50V CERAMIC	EN
	C147	QCT26CH-220	22PF 50V CERAMIC	G
	C147	QCT26CH-220	22PF 50V CERAMIC	GI
	C148	QCT26CH-121	120PF 50V CERAMIC	BS
	C148	QCT26CH-121	120PF 50V CERAMIC	EF
	C148	QCT26CH-121	120PF 50V CERAMIC	EN
	C148	QCT26CH-121	120PF 50V CERAMIC	G
	C148	QCT26CH-121	120PF 50V CERAMIC	GI
	C149	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C150	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C151	QCF11HP-223	0.022MF 50V CERAMIC	
	C152	QCF11HP-223	0.022MF 50V CERAMIC	
	C153	QCC21EM-223	0.022MF 25V CERAMIC	
	C154	QCF11HP-223	0.022MF 50V CERAMIC	
	C155	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C156	QET41CM-227	220MF 16V ELECTRO	
	C157	QET41HM-474	0.47MF 50V ELECTRO	
	C158	QCBB1HK-101	100PF 50V CERAMIC	
	C159	QCBB1HK-101	100PF 50V CERAMIC	
	C160	QCBB1HK-221	220PF 50V CERAMIC	
	C161	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C162	QET41EM-106	10MF 25V ELECTRO	
	C163	QFLB1HJ-102	1000PF 50V MYLAR	
	C164	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C165	QET41HM-474	0.47MF 50V ELECTRO	
	C166	QETB1HM-225	2.2MF 50V ELECTRO	
	C167	QETB1HM-225	2.2MF 50V ELECTRO	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C168	QET41HM-475	4.7MF 50V ELECTRO	
	C169	QCF11HP-223	0.022MF 50V CERAMIC	
	C170	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C171	QET41EM-106	10MF 25V ELECTRO	
	C172	QCVB1CM-103	0.01MF 16V CERAMIC	
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	A
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	BS
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	EF
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	EN
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	G
	C173	QFLB1HJ-223	0.022MF 50V MYLAR	GI
	C173	QFLB1HJ-393	0.039MF 50V MYLAR	U
	C173	QFLB1HJ-393	0.039MF 50V MYLAR	US
	C173	QFLB1HJ-393	0.039MF 50V MYLAR	UT
	C174	QFLB1HJ-473	0.047MF 50V MYLAR	
	C175	QET41EM-106	10MF 25V ELECTRO	
	C176	QCY41HK-102	1000PF 50V CERAMIC	
	C177	QCS21HJ-561	560PF 50V CERAMIC	A
	C177	QCS21HJ-821	820PF 50V CERAMIC	BS
	C177	QCS21HJ-561	560PF 50V CERAMIC	EF
	C177	QCS21HJ-561	560PF 50V CERAMIC	EN
	C177	QCS21HJ-561	560PF 50V CERAMIC	G
	C177	QCS21HJ-561	560PF 50V CERAMIC	GI
	C177	QCS21HJ-821	820PF 50V CERAMIC	U
	C177	QCS21HJ-821	820PF 50V CERAMIC	US
	C177	QCS21HJ-821	820PF 50V CERAMIC	UT
	C178	QCS21HJ-561	560PF 50V CERAMIC	A
	C178	QCS21HJ-821	820PF 50V CERAMIC	BS
	C178	QCS21HJ-561	560PF 50V CERAMIC	EF
	C178	QCS21HJ-561	560PF 50V CERAMIC	EN
	C178	QCS21HJ-561	560PF 50V CERAMIC	G
	C178	QCS21HJ-561	560PF 50V CERAMIC	GI
	C178	QCS21HJ-821	820PF 50V CERAMIC	U
	C178	QCS21HJ-821	820PF 50V CERAMIC	US
	C178	QCS21HJ-821	820PF 50V CERAMIC	UT
	C179	QETB1HM-225	2.2MF 50V ELECTRO	
	C180	QETB1HM-225	2.2MF 50V ELECTRO	
	C181	QET41EM-106	10MF 25V ELECTRO	
	C182	QETB1HM-225	2.2MF 50V ELECTRO	
	C183	QET41HM-105	1MF 50V ELECTRO	
	C184	QET41HM-105	1MF 50V ELECTRO	
	C185	QETB1HM-225	2.2MF 50V ELECTRO	
	C186	QET41HM-474	0.47MF 50V ELECTRO	
	C191	QET41HM-475	4.7MF 50V ELECTRO	
	C192	QCC21EM-473	0.047MF 25V CERAMIC	
	C193	QCS21HJ-180	18PF 50V CERAMIC	
	C194	QCS21HJ-180	18PF 50V CERAMIC	
	C195	QEN41HM-474	0.47MF 50V NON POLE	
	C196	QCY41HK-102	1000PF 50V CERAMIC	
	C197	QCF11HP-223	0.022MF 50V CERAMIC	
	C198	QCF11HP-103	0.01MF 50V CERAMIC	
	C199	QET41HM-475	4.7MF 50V ELECTRO	
	C206	QET41HM-476	47MF 50V ELECTRO	G
	C206	QET41HM-476	47MF 50V ELECTRO	GI
	C207	QCF11HP-223	0.022MF 50V CERAMIC	
	C222	QET41CM-477	470MF 16V ELECTRO	
	C229	QET41CM-227	220MF 16V ELECTRO	
	C241	QCF11HP-223	0.022MF 50V CERAMIC	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R108	QRD167J-103	10K 1/6W CARBON	
⚠	R109	QRZ0077-680	68 1/4W FUSIBLE	
	R118	QRD167J-332	3.3K 1/6W CARBON	
	R119	QRD167J-221	220 1/6W CARBON	
	R121	QRD167J-391	390 1/6W CARBON	
	R122	QRD161J-272	2.7K 1/6W CARBON	
	R123	QRD167J-102	1K 1/6W CARBON	
	R124	QRD167J-681	680 1/6W CARBON	
	R125	QRD167J-332	3.3K 1/6W CARBON	
	R126	QRD167J-221	220 1/6W CARBON	
	R131	QRD167J-331	330 1/6W CARBON	
	R132	QRD167J-103	10K 1/6W CARBON	
	R133	QRD167J-473	47K 1/6W CARBON	
	R134	QRD167J-103	10K 1/6W CARBON	BS
	R134	QRD167J-103	10K 1/6W CARBON	EF
	R134	QRD167J-103	10K 1/6W CARBON	EN
	R134	QRD167J-103	10K 1/6W CARBON	G
	R134	QRD167J-103	10K 1/6W CARBON	GI
	R135	QRD167J-470	47 1/6W CARBON	
	R136	QRD167J-103	10K 1/6W CARBON	
	R141	QRD167J-472	4.7K 1/6W CARBON	BS
	R141	QRD167J-472	4.7K 1/6W CARBON	EF
	R141	QRD167J-472	4.7K 1/6W CARBON	EN
	R141	QRD167J-472	4.7K 1/6W CARBON	G
	R141	QRD167J-472	4.7K 1/6W CARBON	GI

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R142	QRD167J-331	330 1/6W CARBON	BS
	R142	QRD167J-331	330 1/6W CARBON	EF
	R142	QRD167J-331	330 1/6W CARBON	EN
	R142	QRD167J-331	330 1/6W CARBON	G
	R142	QRD167J-331	330 1/6W CARBON	GI
	R143	QRD167J-103	10K 1/6W CARBON	BS
	R143	QRD167J-103	10K 1/6W CARBON	EF
	R143	QRD167J-103	10K 1/6W CARBON	EN
	R143	QRD167J-103	10K 1/6W CARBON	G
	R143	QRD167J-103	10K 1/6W CARBON	GI
	R144	QRD167J-473	47K 1/6W CARBON	BS
	R144	QRD167J-473	47K 1/6W CARBON	EF
	R144	QRD167J-473	47K 1/6W CARBON	EN
	R144	QRD167J-473	47K 1/6W CARBON	G
	R144	QRD167J-473	47K 1/6W CARBON	GI
	R145	QRD167J-103	10K 1/6W CARBON	BS
	R145	QRD167J-103	10K 1/6W CARBON	EF
	R145	QRD167J-103	10K 1/6W CARBON	EN
	R145	QRD167J-103	10K 1/6W CARBON	G
	R145	QRD167J-103	10K 1/6W CARBON	GI
	R146	QRD167J-560	56 1/6W CARBON	
	R147	QRD167J-103	10K 1/6W CARBON	
	R148	QRD167J-103	10K 1/6W CARBON	
	R149	QRD167J-223	22K 1/6W CARBON	A
	R149	QRD167J-223	22K 1/6W CARBON	BS
	R149	QRD167J-223	22K 1/6W CARBON	EF
	R149	QRD167J-223	22K 1/6W CARBON	EN
	R149	QRD167J-273	27K 1/6W CARBON	G
	R149	QRD167J-273	27K 1/6W CARBON	GI
	R149	QRD167J-223	22K 1/6W CARBON	U
	R149	QRD167J-223	22K 1/6W CARBON	US
	R149	QRD167J-223	22K 1/6W CARBON	UT
	R150	QRD167J-103	10K 1/6W CARBON	
	R151	QRD167J-222	2.2K 1/6W CARBON	
	R153	QRD167J-103	10K 1/6W CARBON	
	R154	QRD167J-103	10K 1/6W CARBON	
	R155	QRD167J-562	5.6K 1/6W CARBON	
	R156	QRD167J-822	8.2K 1/6W CARBON	
	R157	QRD167J-103	10K 1/6W CARBON	
	R158	QRD167J-273	27K 1/6W CARBON	
	R159	QRD167J-561	560 1/6W CARBON	
	R160	QRD167J-103	10K 1/6W CARBON	A
	R160	QRD167J-102	1K 1/6W CARBON	BS
	R160	QRD167J-103	10K 1/6W CARBON	EF
	R160	QRD167J-103	10K 1/6W CARBON	EN
	R160	QRD167J-103	10K 1/6W CARBON	G
	R160	QRD167J-103	10K 1/6W CARBON	GI
	R160	QRD167J-562	5.6K 1/6W CARBON	U
	R160	QRD167J-562	5.6K 1/6W CARBON	US
	R160	QRD167J-562	5.6K 1/6W CARBON	UT
	R161	QRD167J-104	100K 1/6W CARBON	A
	R161	QRD167J-683	68K 1/6W CARBON	BS
	R161	QRD167J-104	100K 1/6W CARBON	EF
	R161	QRD167J-104	100K 1/6W CARBON	EN
	R161	QRD167J-104	100K 1/6W CARBON	G
	R161	QRD167J-104	100K 1/6W CARBON	GI
	R161	QRD167J-823	82K 1/6W CARBON	U
	R161	QRD167J-823	82K 1/6W CARBON	US
	R161	QRD167J-823	82K 1/6W CARBON	UT
	R162	QRD167J-104	100K 1/6W CARBON	A
	R162	QRD167J-683	68K 1/6W CARBON	BS
	R162	QRD167J-104	100K 1/6W CARBON	EF
	R162	QRD167J-104	100K 1/6W CARBON	EN
	R162	QRD167J-104	100K 1/6W CARBON	G
	R162	QRD167J-104	100K 1/6W CARBON	GI
	R162	QRD167J-823	82K 1/6W CARBON	U
	R162	QRD167J-823	82K 1/6W CARBON	US
	R162	QRD167J-823	82K 1/6W CARBON	UT
	R163	QRD167J-332	3.3K 1/6W CARBON	A
	R163	QRD167J-332	3.3K 1/6W CARBON	BS
	R163	QRD167J-332	3.3K 1/6W CARBON	EF
	R163	QRD167J-332	3.3K 1/6W CARBON	EN
	R163	QRD167J-332	3.3K 1/6W CARBON	G
	R163	QRD167J-332	3.3K 1/6W CARBON	GI
	R163	QRD167J-472	4.7K 1/6W CARBON	U
	R163	QRD167J-472	4.7K 1/6W CARBON	US
	R163	QRD167J-472	4.7K 1/6W CARBON	UT
	R164	QRD167J-332	3.3K 1/6W CARBON	A
	R164	QRD167J-332	3.3K 1/6W CARBON	BS
	R164	QRD167J-332	3.3K 1/6W CARBON	EF
	R164	QRD167J-332	3.3K 1/6W CARBON	EN
	R164	QRD167J-332	3.3K 1/6W CARBON	G
	R164	QRD167J-332	3.3K 1/6W CARBON	GI
	R164	QRD167J-472	4.7K 1/6W CARBON	U
	R164	QRD167J-472	4.7K 1/6W CARBON	US
	R164	QRD167J-472	4.7K 1/6W CARBON	UT
	R165	QRD167J-274	270K 1/6W CARBON	A
	R165	QRD167J-274	270K 1/6W CARBON	BS
	R165	QRD167J-274	270K 1/6W CARBON	EF
	R165	QRD167J-274	270K 1/6W CARBON	EN

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R165	QRD167J-274	270K 1/6W CARBON	G
	R165	QRD167J-274	270K 1/6W CARBON	GI
	R165	QRD167J-184	180K 1/6W CARBON	U
	R165	QRD167J-184	180K 1/6W CARBON	US
	R165	QRD167J-184	180K 1/6W CARBON	UT
	R166	QRD167J-274	270K 1/6W CARBON	A
	R166	QRD167J-274	270K 1/6W CARBON	BS
	R166	QRD167J-274	270K 1/6W CARBON	EF
	R166	QRD167J-274	270K 1/6W CARBON	EN
	R166	QRD167J-274	270K 1/6W CARBON	G
	R166	QRD167J-274	270K 1/6W CARBON	GI
	R166	QRD167J-184	180K 1/6W CARBON	U
	R166	QRD167J-184	180K 1/6W CARBON	US
	R166	QRD167J-184	180K 1/6W CARBON	UT
	R167	QRD167J-473	47K 1/6W CARBON	A
	R167	QRD167J-473	47K 1/6W CARBON	BS
	R167	QRD167J-473	47K 1/6W CARBON	EF
	R167	QRD167J-473	47K 1/6W CARBON	EN
	R167	QRD167J-473	47K 1/6W CARBON	G
	R167	QRD167J-473	47K 1/6W CARBON	GI
	R167	QRD167J-393	39K 1/6W CARBON	U
	R167	QRD167J-393	39K 1/6W CARBON	US
	R167	QRD167J-393	39K 1/6W CARBON	UT
	R168	QRD167J-103	10K 1/6W CARBON	
	R169	QRD167J-103	10K 1/6W CARBON	
	R171	QRD167J-682	6.8K 1/6W CARBON	
	R172	QRD167J-682	6.8K 1/6W CARBON	
	R180	QRD167J-103	10K 1/6W CARBON	
	R181	QRD167J-222	2.2K 1/6W CARBON	
	R182	QRD167J-181	180 1/6W CARBON	
	R190	QRD167J-103	10K 1/6W CARBON	
	R191	QRD167J-562	5.6K 1/6W CARBON	
	R194	QRD167J-103	10K 1/6W CARBON	
	R195	QRD167J-473	47K 1/6W CARBON	
	R196	QRD167J-103	10K 1/6W CARBON	A
	R196	QRD167J-222	2.2K 1/6W CARBON	BS
	R196	QRD167J-222	2.2K 1/6W CARBON	EF
	R196	QRD167J-222	2.2K 1/6W CARBON	EN
	R196	QRD167J-222	2.2K 1/6W CARBON	G
	R196	QRD167J-222	2.2K 1/6W CARBON	GI
	R196	QRD167J-103	10K 1/6W CARBON	U
	R196	QRD167J-103	10K 1/6W CARBON	US
	R196	QRD167J-103	10K 1/6W CARBON	UT
	R197	QRD167J-222	2.2K 1/6W CARBON	
	R198	QRD167J-332	3.3K 1/6W CARBON	A
	R198	QRD167J-822	8.2K 1/6W CARBON	BS
	R198	QRD167J-822	8.2K 1/6W CARBON	EF
	R198	QRD167J-822	8.2K 1/6W CARBON	EN
	R198	QRD167J-822	8.2K 1/6W CARBON	G
	R198	QRD167J-822	8.2K 1/6W CARBON	GI
	R198	QRD167J-332	3.3K 1/6W CARBON	U
	R198	QRD167J-332	3.3K 1/6W CARBON	US
	R198	QRD167J-332	3.3K 1/6W CARBON	UT
	R199	QRD167J-472	4.7K 1/6W CARBON	
	R228	QRD167J-222	2.2K 1/6W CARBON	

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	L101	EQL4004-1R0	INDUCTOR	
	L106	EQL3001-102K	INDUCTOR	
	L110	EQL4004-100	INDUCTOR	G
	L110	EQL4004-100	INDUCTOR	GI
	L120	EQL4004-1R0	INDUCTOR	
	T101	EQR1111-014	AM RF COIL	
	T102	EQR1111-005	AM RF COIL	BS
	T102	EQR1111-005	AM RF COIL	EF
	T102	EQR1111-005	AM RF COIL	EN
	T102	EQR1111-005	AM RF COIL	G
	T102	EQR1111-005	AM RF COIL	GI
	T103	EQR1207-017	MW OSC COIL	
	T104	EQR1307-010	LW OSC COIL	BS
	T104	EQR1307-010	LW OSC COIL	EF
	T104	EQR1307-010	LW OSC COIL	EN
	T104	EQR1307-010	LW OSC COIL	G
	T104	EQR1307-010	LW OSC COIL	GI
	T105	EQT2140-017	I.F. TRANSFORMER	
	T107	ECB1560-010	CERAMIC FILTER	
	AT101	EMB41YV-301K	ANTENNA TERMINAL	
	CF101	ECB2123-006R	CERAMIC FILTER	A
	CF101	ECB2118-007R	CERAMIC FILTER	BS
	CF101	ECB2118-007R	CERAMIC FILTER	EF
	CF101	ECB2118-007R	CERAMIC FILTER	EN
	CF101	ECB2118-007R	CERAMIC FILTER	G
	CF101	ECB2118-007R	CERAMIC FILTER	GI
	CF101	ECB2123-006R	CERAMIC FILTER	U
	CF101	ECB2123-006R	CERAMIC FILTER	US
	CF101	ECB2123-006R	CERAMIC FILTER	UT
	CF102	ECB2123-006R	CERAMIC FILTER	A

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	CF102	ECB2118-007R	CERAMIC FILTER	BS
	CF102	ECB2118-007R	CERAMIC FILTER	EF
	CF102	ECB2118-007R	CERAMIC FILTER	EN
	CF102	ECB2118-007R	CERAMIC FILTER	G
	CF102	ECB2118-007R	CERAMIC FILTER	GI
	CF102	ECB2123-006R	CERAMIC FILTER	U
	CF102	ECB2123-006R	CERAMIC FILTER	US
	CF102	ECB2123-006R	CERAMIC FILTER	UT
	EP102	E308655-001	SHIELD BKT	
	FE101	EAF2203-001	FRONT END	A
	FE101	EAF2203-001	FRONT END	BS
	FE101	EAF2203-001	FRONT END	EF
	FE101	EAF2203-001	FRONT END	EN
	FE101	EAF2203-003	FRONT END	G
	FE101	EAF2203-003	FRONT END	GI

⚠ : SAFETY PARTS

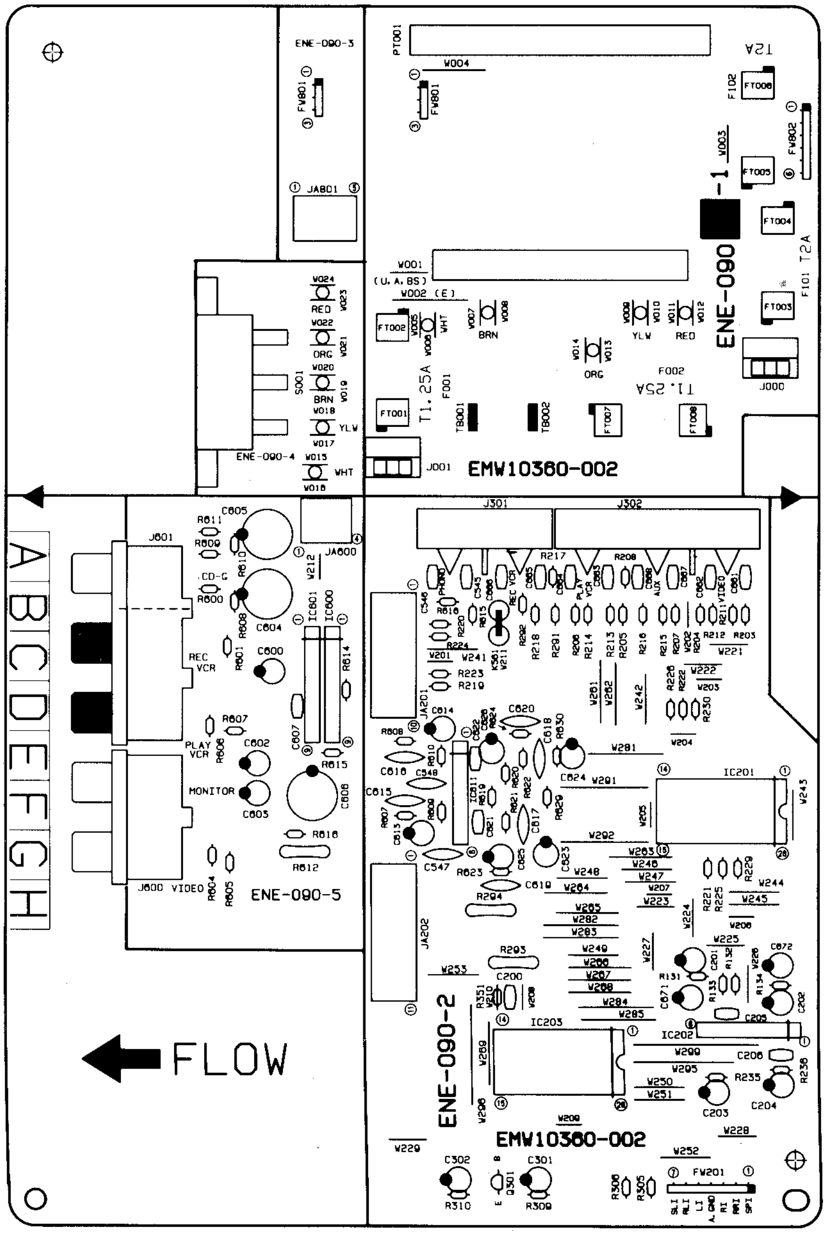
Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	FE101	EAF2203-001	FRONT END	U
	FE101	EAF2203-001	FRONT END	US
	FE101	EAF2203-001	FRONT END	UT
	JA101	EMV7140-L15R	CONNECTOR(15PIN)	
	LP101	EQF0101-002	LOW PASS FILTER	
	LP102	EQF0102-001	LOW PASS FILTER	G
	LP102	EQF0102-001	LOW PASS FILTER	GI
	TC105	ENZ1003-006	TRIMMER	
	TC106	ENZ1003-006	TRIMMER	BS
	TC106	ENZ1003-006	TRIMMER	EF
	TC106	ENZ1003-006	TRIMMER	EN
	TC106	ENZ1003-006	TRIMMER	G
	TC106	ENZ1003-006	TRIMMER	GI
	XT102	ECX0007-200KC	RESONATOR	
	XT103	ECX0000-456KR	RESONATOR	

⚠ : SAFETY PARTS

■ENE-090☐ Source Selector & Power Supply PC Board Ass'y

Note : ENE-090☐ varies according to the areas employed. See note (1) when placing an order.


ENE-090-3
FW801
JA801
PT001
W004
T2A
F102
FT006
FW802
W003
FT005
ENE-090-1
FT004
F101 T2A
FT003
J000
W001
(U, A, BS)
W002 (E)
FT002
FT001
F001
T1.25A
F002
T1.25A
TB001
TB002
FT007
FT008
RED
ORG
BRN
YLW
WHT
S001
ENE-090-4
J001
EMW10360-002
J301
J302
J601
C605
JA600
IC601
IC600
REC VCR
PLAY VCR
MONITOR
J600 VIDEO
ENE-090-5
A
B
C
D
E
F
G
H
PHONO
CD
AUX
VIDEO
IC201
IC611
JA201
JA202
IC203
IC202
ENE-090-2
EMW10360-002
FW201
Q301
C302
C301
R310
R309
FLOW

Note (1)

PC Board Ass'y	Version	Designated Areas
ENE-090 A	US UT U	Singapore Taiwan Universal Type
ENE-090 B	EN EF	Scandinavia Continental Europe
ENE-090 C BS	BS	the U.K.
ENE-090 D	G GI	Germany Italy
ENE-090 E	A	Australia

Transistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	Q301	2SC3311A(Q,R)	SILICON MATSUSHITA	

⚠ : SAFETY PARTS

I.C.s

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	IC201	TC9163N	I.C. TOSHIBA	
	IC202	VC4580L	I.C. DAINICHI	
	IC203	TC9164N	I.C. TOSHIBA	
	IC600	LA7952	I.C. SANYO	
	IC601	LA7952	I.C. SANYO	
	IC611	VC4580LD	I.C. DAINICHI	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C200	QCBB1HK-561	560PF 50V CERAMIC	
	C201	EEZ5009-226	22MF ELECTRO	
	C202	EEZ5009-226	22MF ELECTRO	
	C203	EEZ5009-226	22MF ELECTRO	
	C204	EEZ5009-226	22MF ELECTRO	
	C205	QCBB1HK-101	100PF 50V CERAMIC	
	C206	QCBB1HK-101	100PF 50V CERAMIC	
	C301	QET41CM-226	22MF 16V ELECTRO	
	C302	QET41CM-226	22MF 16V ELECTRO	
	C545	QCBB1HK-101	100PF 50V CERAMIC	A
	C545	QCBB1HK-101	100PF 50V CERAMIC	BS
	C545	QCBB1HK-101	100PF 50V CERAMIC	EF
	C545	QCBB1HK-101	100PF 50V CERAMIC	EN
	C545	QCBB1HK-331	330PF 50V CERAMIC	G
	C545	QCBB1HK-331	330PF 50V CERAMIC	GI
	C545	QCBB1HK-101	100PF 50V CERAMIC	U
	C545	QCBB1HK-101	100PF 50V CERAMIC	US
	C545	QCBB1HK-101	100PF 50V CERAMIC	UT
	C546	QCBB1HK-101	100PF 50V CERAMIC	A
	C546	QCBB1HK-101	100PF 50V CERAMIC	BS
	C546	QCBB1HK-101	100PF 50V CERAMIC	EF
	C546	QCBB1HK-101	100PF 50V CERAMIC	EN
	C546	QCBB1HK-331	330PF 50V CERAMIC	G
	C546	QCBB1HK-331	330PF 50V CERAMIC	GI
	C546	QCBB1HK-101	100PF 50V CERAMIC	U
	C546	QCBB1HK-101	100PF 50V CERAMIC	US
	C546	QCBB1HK-101	100PF 50V CERAMIC	UT
	C547	QCY41HK-102	1000PF 50V CERAMIC	
	C548	QCY41HK-102	1000PF 50V CERAMIC	
	C600	QET41AM-476	47MF 10V ELECTRO	U
	C600	QET41AM-476	47MF 10V ELECTRO	US
	C600	QET41AM-476	47MF 10V ELECTRO	UT
	C602	QET41AM-476	47MF 10V ELECTRO	
	C603	QET41AM-476	47MF 10V ELECTRO	
	C604	QETB0JM-108	1000MF 6.3V ELECTRO	
	C605	QETB0JM-108	1000MF 6.3V ELECTRO	
	C606	QETB1CM-228M	2200MF 16V ELECTRO	
	C607	QCVB1CM-103	0.01MF 16V CERAMIC	
	C613	QETB1HM-225	2.2MF 50V ELECTRO	
	C614	QETB1HM-225	2.2MF 50V ELECTRO	

⚠ : SAFETY PARTS

Capacitors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	C615	QCS21HJ-221	220PF 50V CERAMIC	
	C616	QCS21HJ-221	220PF 50V CERAMIC	
	C617	QCY21HK-182	1800PF 50V CERAMIC	
	C618	QCY21HK-182	1800PF 50V CERAMIC	
	C619	QCY21HK-682	6800PF 50V CERAMIC	
	C620	QCY21HK-682	6800PF 50V CERAMIC	
	C621	QCBB1HK-101	100PF 50V CERAMIC	
	C622	QCBB1HK-101	100PF 50V CERAMIC	
	C623	QETB1HM-225	2.2MF 50V ELECTRO	
	C624	QETB1HM-225	2.2MF 50V ELECTRO	
	C625	QETB1EM-226	22MF 25V ELECTRO	
	C626	QETB1EM-226	22MF 25V ELECTRO	
	C661	QCBB1HK-331	330PF 50V CERAMIC	G
	C661	QCBB1HK-331	330PF 50V CERAMIC	GI
	C662	QCBB1HK-331	330PF 50V CERAMIC	G
	C662	QCBB1HK-331	330PF 50V CERAMIC	GI
	C663	QCBB1HK-331	330PF 50V CERAMIC	G
	C663	QCBB1HK-331	330PF 50V CERAMIC	GI
	C664	QCBB1HK-331	330PF 50V CERAMIC	G
	C664	QCBB1HK-331	330PF 50V CERAMIC	GI
	C665	QCBB1HK-331	330PF 50V CERAMIC	G
	C665	QCBB1HK-331	330PF 50V CERAMIC	GI
	C666	QCBB1HK-331	330PF 50V CERAMIC	G
	C666	QCBB1HK-331	330PF 50V CERAMIC	GI
	C667	QCBB1HK-331	330PF 50V CERAMIC	G
	C667	QCBB1HK-331	330PF 50V CERAMIC	GI
	C668	QCBB1HK-331	330PF 50V CERAMIC	G
	C668	QCBB1HK-331	330PF 50V CERAMIC	GI
	C671	QET41CM-476	47MF 16V ELECTRO	
	C672	QET41CM-476	47MF 16V ELECTRO	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R131	QRD167J-104	100K 1/6W CARBON	
	R132	QRD167J-104	100K 1/6W CARBON	
	R133	QRD167J-104	100K 1/6W CARBON	
	R134	QRD167J-104	100K 1/6W CARBON	
	R203	QRD167J-153	15K 1/6W CARBON	
	R204	QRD167J-153	15K 1/6W CARBON	
	R205	QRD167J-153	15K 1/6W CARBON	
	R206	QRD167J-153	15K 1/6W CARBON	
	R207	QRD167J-153	15K 1/6W CARBON	
	R208	QRD167J-153	15K 1/6W CARBON	
	R211	QRD167J-104	100K 1/6W CARBON	
	R212	QRD167J-104	100K 1/6W CARBON	
	R213	QRD167J-104	100K 1/6W CARBON	
	R214	QRD167J-104	100K 1/6W CARBON	
	R215	QRD167J-104	100K 1/6W CARBON	
	R216	QRD167J-104	100K 1/6W CARBON	
	R217	QRD167J-222	2.2K 1/6W CARBON	
	R218	QRD167J-222	2.2K 1/6W CARBON	
	R219	QRD167J-242	2.4K 1/6W CARBON	
	R220	QRD167J-242	2.4K 1/6W CARBON	
	R221	QRD167J-822	8.2K 1/6W CARBON	
	R222	QRD167J-822	8.2K 1/6W CARBON	
	R223	QRD167J-221	220 1/6W CARBON	
	R224	QRD167J-221	220 1/6W CARBON	
	R225	QRD167J-104	100K 1/6W CARBON	
	R226	QRD167J-104	100K 1/6W CARBON	
	R229	QRD167J-103	10K 1/6W CARBON	
	R230	QRD167J-103	10K 1/6W CARBON	
	R235	QRD167J-104	100K 1/6W CARBON	
	R236	QRD167J-104	100K 1/6W CARBON	
	R291	QRD167J-513	51K 1/6W CARBON	
	R292	QRD167J-513	51K 1/6W CARBON	
	R293	QRD148J-100	10 1/4W CARBON	
	R294	QRD148J-100	10 1/4W CARBON	
	R305	QRD167J-104	100K 1/6W CARBON	
	R306	QRD167J-104	100K 1/6W CARBON	
	R309	QRD167J-105	1M 1/6W CARBON	
	R310	QRD167J-102	1K 1/6W CARBON	
	R600	QRD167J-750	75 1/6W CARBON	U
	R600	QRD167J-750	75 1/6W CARBON	US
	R600	QRD167J-750	75 1/6W CARBON	UT
	R601	QRD161J-100	10 1/6W CARBON	U
	R601	QRD161J-100	10 1/6W CARBON	US
	R601	QRD161J-100	10 1/6W CARBON	UT
	R604	QRD167J-750	75 1/6W CARBON	
	R605	QRD161J-100	10 1/6W CARBON	
	R606	QRD167J-750	75 1/6W CARBON	
	R607	QRD161J-272	2.7K 1/6W CARBON	
	R608	QRD161J-272	2.7K 1/6W CARBON	
	R609	QRD167J-104	100K 1/6W CARBON	
	R610	QRD167J-104	100K 1/6W CARBON	
	R611	QRD167J-750	75 1/6W CARBON	
	R612	QRD148J-100	10 1/4W CARBON	
	R615	QRD167J-104	100K 1/6W CARBON	
	R616	QRD167J-104	100K 1/6W CARBON	

⚠ : SAFETY PARTS

Resistors

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	R619	QRD167J-751	750 1/6W CARBON	
	R620	QRD167J-751	750 1/6W CARBON	
	R621	QRD167J-393	39K 1/6W CARBON	
	R622	QRD167J-393	39K 1/6W CARBON	
	R623	QRD167J-474	470K 1/6W CARBON	
	R624	QRD167J-474	470K 1/6W CARBON	
	R629	QRD167J-104	100K 1/6W CARBON	
	R630	QRD167J-104	100K 1/6W CARBON	
	R637	QRD161J-100	10 1/6W CARBON	
	R638	QRD167J-473	47K 1/6W CARBON	
	R639	QRD167J-750	75 1/6W CARBON	
	R640	QRD167J-473	47K 1/6W CARBON	
	R644	QRD167J-474	470K 1/6W CARBON	
	R645	QRD167J-474	470K 1/6W CARBON	
	R646	QRD167J-474	470K 1/6W CARBON	

⚠ : SAFETY PARTS

Others

⚠	ITEM	PART NUMBER	DESCRIPTION	AREA
	J	EMV7112-003	CONNECTOR(3PIN)	
	J001	EMV7112-003	CONNECTOR(3PIN)	
	J301	EMN00TV-405A	4P PIN JACK	
	J302	EMN00TV-602A	6P PIN JACK	
	J600	EMN00YV-205A	2P PIN JACK	
	J601	EMN00YV-205A	2P PIN JACK	A
	J601	EMN00YV-205A	2P PIN JACK	BS
	J601	EMN00YV-205A	2P PIN JACK	EF
	J601	EMN00YV-205A	2P PIN JACK	EN
	J601	EMN00YV-205A	2P PIN JACK	G
	J601	EMN00YV-205A	2P PIN JACK	GI
	J601	EMN00YV-304A	3P PIN JACK	U
	J601	EMN00YV-304A	3P PIN JACK	US
	J601	EMN00YV-304A	3P PIN JACK	UT
	S001	QSS4004-E01	SLIDE SWITCH(VOLTAGE SELECTOR)	U
	S001	QSS4004-E01	SLIDE SWITCH(VOLTAGE SELECTOR)	US
	S001	QSS4004-E01	SLIDE SWITCH(VOLTAGE SELECTOR)	UT
	FL001	E67132-T2R5	T2R5 FUSE LABEL	U
	FL001	E67132-T2R5	T2R5 FUSE LABEL	US
	FL001	E67132-T2R5	T2R5 FUSE LABEL	UT
	FT001	EMG7331-002U	FUSE CLIP	
	FT002	EMG7331-002	FUSE CLIP	
	FT003	EMG7331-002	FUSE CLIP	
	FT004	EMG7331-002U	FUSE CLIP	
	FT005	EMG7331-002	FUSE CLIP	
	FT006	EMG7331-002U	FUSE CLIP	
	FT007	EMG7331-002	FUSE CLIP	U
	FT007	EMG7331-002	FUSE CLIP	US
	FT007	EMG7331-002	FUSE CLIP	UT
	FT008	EMG7331-002U	FUSE CLIP	U
	FT008	EMG7331-002U	FUSE CLIP	US
	FT008	EMG7331-002U	FUSE CLIP	UT
	FW201	EWR37B-10LST	FLAT WIRE(7PIN)	
	FW801	EWR33B-10SST	FLAT WIRE(3PIN)	
	FW802	EWR36B-10LST	FLAT WIRE(6PIN)	
	JA201	EMV7125-010R	CONNECTOR(10PIN)	
	JA202	EMV7125-011R	CONNECTOR(11PIN)	
	JA600	EMV7125-004R	CONNECTOR(4PIN)	
	JA801	EMV7125-005R	CONNECTOR(5PIN)	
	TB001	EMZ4001-001	TAB	
	TB002	EMZ4001-001	TAB	

⚠ : SAFETY PARTS

Accessories List

⚠	Part Number	Part Name	Q'ty	Description	Areas
	E30580-2030A	INSTRUCTION BOOK	1		U
	E30580-2030A	INSTRUCTION BOOK	1		US
	E30580-2030A	INSTRUCTION BOOK	1		UT
	E30580-2031A	INSTRUCTION BOOK	1		EF
	E30580-2031A	INSTRUCTION BOOK	1		G
	E30580-2031A	INSTRUCTION BOOK	1		GI
	E30580-2032A	INSTRUCTION BOOK	1		A
	E30580-2032ABS	INSTRUCTION BOOK	1		BS
	E30580-2033A	INSTRUCTION BOOK	1		EN
	BT20060	WARRANTY CARD	1		BS
	BT-20134	WARRANTY CARD	1		G
	BT-20122	WARRANTY CARD	1		A
	BT-20122-1	LTD STECKER	1		A
	BT-20066A	EEC AGENCY	1		BS
	EWP502-005K	BILT-IN ANTENNA	1		A
	EWP502-005K	BILT-IN ANTENNA	1		BS
	EWP502-005K	BILT-IN ANTENNA	1		EF
	EWP502-005K	BILT-IN ANTENNA	1		EN
	EWP502-005K	BILT-IN ANTENNA	1		GI
	EWP502-005K	BILT-IN ANTENNA	1		U
	EWP502-005K	BILT-IN ANTENNA	1		US
	EWP502-005K	BILT-IN ANTENNA	1		UT
	E67007-001	WIRE ANTENNA	1		G
	E43486-546A	CAUTION SHEET	1	FOR VOLTAGE SELECTOR	U
	E43486-546A	CAUTION SHEET	1	FOR VOLTAGE SELECTOR	US
	E43486-546A	CAUTION SHEET	1	FOR VOLTAGE SELECTOR	UT
⚠	ENZ2202-001	SIEMENS PLUG	1		US
⚠	E04056	SIEMENS PLUG	1		U
⚠	E04056	SIEMENS PLUG	1		UT
	E43486-340A	SAFETY SHEET	1		BS
	EMZ2001-014	ADAPTOR	1		A
	EMZ2001-014	ADAPTOR	1		BS
	EMZ2001-014	ADAPTOR	1		EF
	EMZ2001-014	ADAPTOR	1		EN
	EMZ2001-014	ADAPTOR	1		GI
	EMZ2001-014	ADAPTOR	1		U
	EMZ2001-014	ADAPTOR	1		US
	EMZ2001-014	ADAPTOR	1		UT
	EQB4001-015	LOOP ANTENNA	1		
	EWP902-031	PLUG CORD	2		
	RM-SEMXG9U	REMOTE CONTROLLER	1		
	UR64EC1293A	BATTERY COVER	1		
	UM-4NJ-2PSA	BATTERY	1		
	E43486-519A	CAUTION SHEET	1		
	QPGA025-03505	ENVELOPE	1		A
	QPGA025-03505	ENVELOPE	1		EF
	QPGA025-03505	ENVELOPE	1		EN
	QPGA025-03505	ENVELOPE	1		G
	QPGA025-03505	ENVELOPE	1		GI
	QPGA025-03505	ENVELOPE	1		U
	QPGA025-03505	ENVELOPE	1		US
	QPGA025-03505	ENVELOPE	1		UT
	QPGA025-03505B	ENVELOPE	1		BS

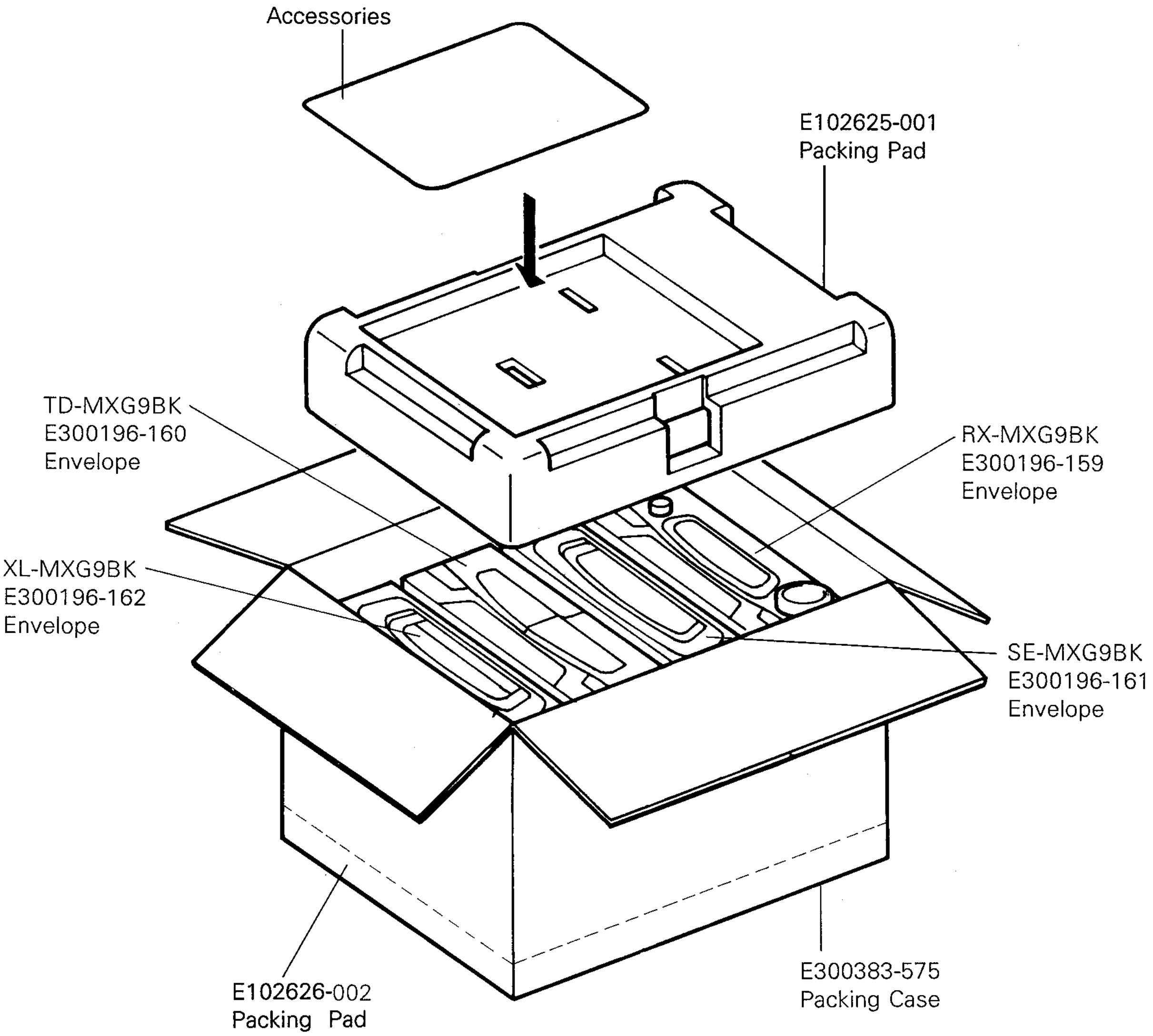
The Marks for Designated Areas

A .... Australia
BS ...... the U.K.
US ...... Singapore
EN ..... Scandinavia
G ...... Germany
UT ..... Taiwan
EF ...... Continental Europe
GI ...... Itary
U ...... Universal Type
No mark indicates all areas.

⚠ SAFETY PATYS

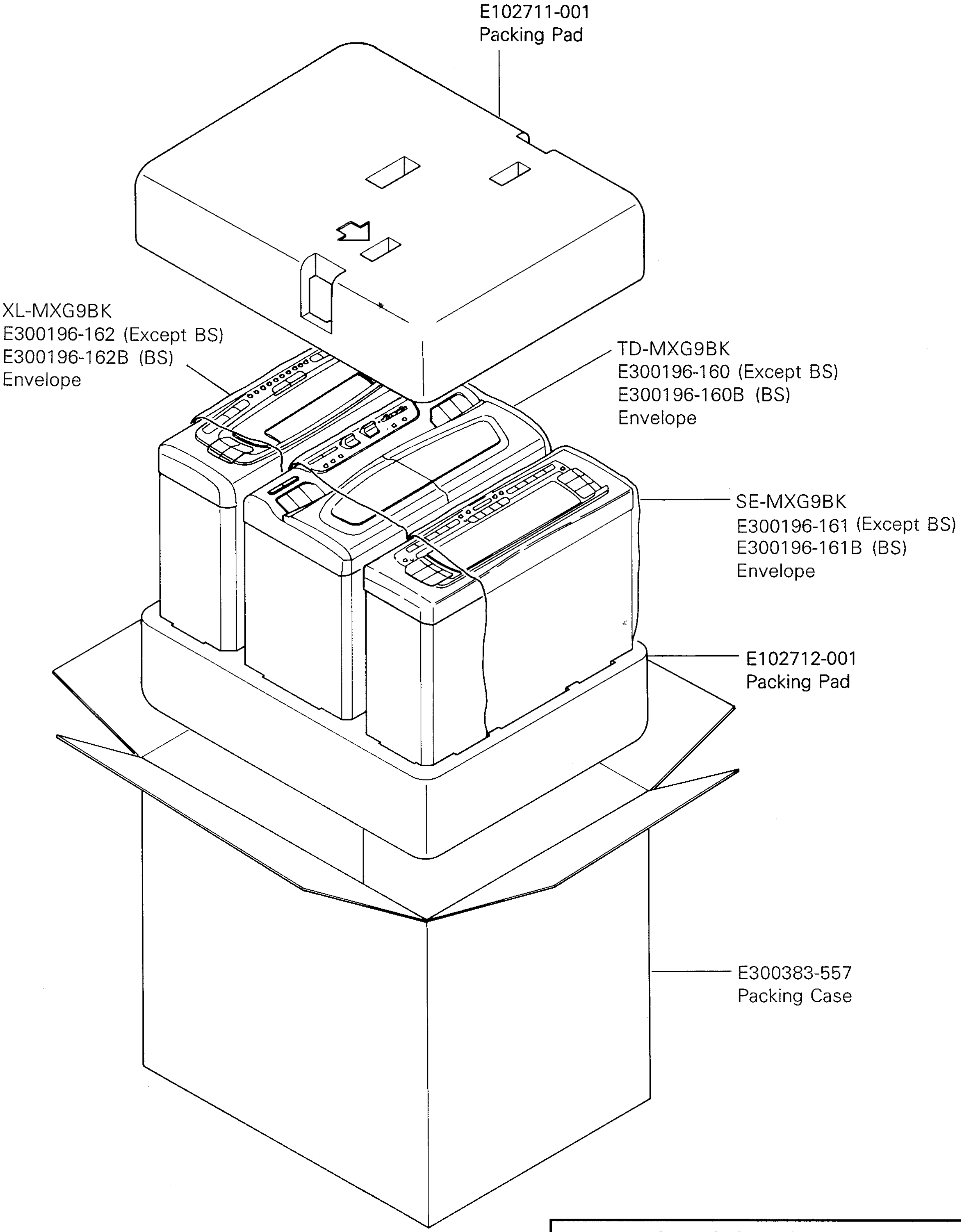
Packing Materials and Part Numbers

■ CA-MXG9BK (U, UT, US)


Accessories
E102625-001
Packing Pad
TD-MXG9BK
E300196-160
Envelope
RX-MXG9BK
E300196-159
Envelope
XL-MXG9BK
E300196-162
Envelope
SE-MXG9BK
E300196-161
Envelope
E102626-002
Packing Pad
E300383-575
Packing Case

The Marks for Designated Areas			
US	Singapore	UT	Taiwan
U	Universal Type	No mark indicates all areas.	

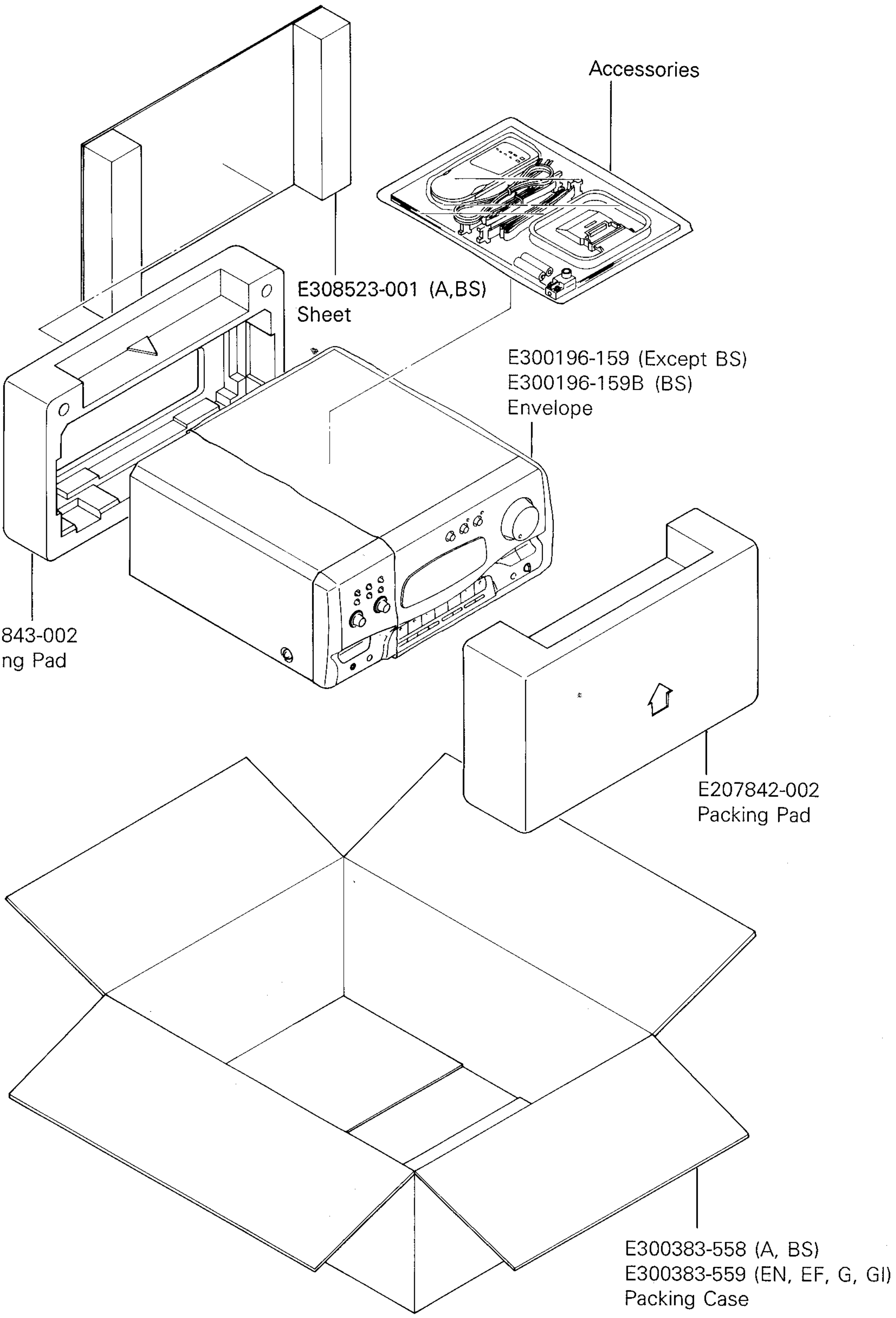
■ XT-MXG9BK (A, EN, EF, BS, G, GI)


E102711-001
Packing Pad
XL-MXG9BK
E300196-162 (Except BS)
E300196-162B (BS)
Envelope
TD-MXG9BK
E300196-160 (Except BS)
E300196-160B (BS)
Envelope
SE-MXG9BK
E300196-161 (Except BS)
E300196-161B (BS)
Envelope
E102712-001
Packing Pad
E300383-557
Packing Case

The Marks for Designated Areas

A	Australia	EN	Scandinavia
EF	Continental Europe	BS	the U.K.
G	Germany	GI	Italy

No mark indicates all areas.


Accessories
E308523-001 (A,BS)
Sheet
E300196-159 (Except BS)
E300196-159B (BS)
Envelope
E207843-002
Packing Pad
E207842-002
Packing Pad
E300383-558 (A, BS)
E300383-559 (EN, EF, G, GI)
Packing Case

The Marks for Designated Areas			
A	Australia	EN	Scandinavia
EF	Continental Europe	BS	the U.K.
G	Germany	GI	Italy
No mark indicates all areas.			

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